

SEQUENCE LISTING

<110> Millennium Pharmaceuticals, Inc.  
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<120> METHODS AND COMPOSITIONS FOR TREATING  
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10653, 9235, 21668, 17794, 2210, 6169, 10102, 21061, 17662,  
1468, 12282, 6350, 9035, 1820, 23652, 7301, 8925, 8701,  
3533, 9462, 9123, 12788, 17729, 65552, 1261, 21476, 33770,  
9380, 2569654, 33556, 53656, 44143, 32612, 10671, 261,  
44570, 41922, 2552, 2417, 19319, 43969, 8921, 8993, 955,  
32345, 966, 1920, 17318, 1510, 14180, 26005, 554, 16408,  
42028, 112091, 13886, 13942, 1673, 54946 OR 2419

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Leu Ser His Pro Trp Leu Gln Asp Tyr	Gln Thr Trp Leu Asp Leu Arg			
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 Ser Ala Pro Asp Glu Pro Leu Leu Gln Lys Ser Pro Ser Glu Ser Phe  
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Phe	Val	Ile	His	Ser	Tyr	Thr	Arg	Pro	Thr	Val	Cys	Gln	Tyr	Cys	Lys	275	280	285
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Ser	Asp	Val	Val	Met	Glu	Glu	Gly	Ser	Asp	Asp	Asn	Asp	Ser	Glu	Arg	340	345	350
Asn	Ser	Gly	Leu	Met	Asp	Asp	Met	Glu	Glu	Ala	Met	Val	Gln	Asp	Ala	355	360	365
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Pro	Asp	Pro	Asp	His	Glu	Asp	Ala	Asn	Arg	Thr	Ile	Ser	Pro	Ser	Thr	385	390	395
Ser	Asn	Asn	Ile	Pro	Leu	Met	Arg	Val	Val	Gln	Ser	Val	Lys	His	Thr	400	405	410
Lys	Arg	Lys	Ser	Ser	Thr	Val	Met	Lys	Glu	Gly	Trp	Met	Val	His	Tyr	415	420	425
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Ala	Leu	Ile	Pro	Asn	Gly	Ala	Asn	Pro	His	Cys	Phe	Glu	Ile	Thr	Thr	475	480	485
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Pro	Ser	Pro	Asn	Asn	Ser	Val	Leu	Thr	Ser	Gly	Val	Gly	Ala	Asp	Val	505	510	515
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Gln	Ile	Leu	Val	Ala	Leu	Arg	His	Leu	His	Phe	Lys	Asn	Ile	Val	His	670	675	680
Cys	Asp	Leu	Lys	Pro	Glu	Asn	Val	Leu	Leu	Ala	Ser	Ala	Asp	Pro	Phe	685	690	695
Pro	Gln	Val	Lys	Leu	Cys	Asp	Phe	Gly	Phe	Ala	Arg	Ile	Ile	Gly	Glu	700	705	710
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Leu	Ile	His	Asn	Leu	Arg	Lys	Asn	Gly	Ile	Ile	Lys	Thr	Asp	Lys	Val	
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Ala	Pro	His	Met	His	Ala	Tyr	Ala	Leu	Glu	Leu	Leu	Phe	Asp	Gln	Leu	
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cat	gaa	gga	gct	aaa	gct	ctt	gat	gta	gga	tct	gga	agt	gga	atc	ctt	349
His	Glu	Gly	Ala	Lys	Ala	Leu	Asp	Val	Gly	Ser	Gly	Ser	Gly	Ile	Leu	
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act	gca	tgt	ttt	gca	cgt	atg	gtt	gga	tgt	act	gga	aaa	gtc	ata	gga	397
Thr	Ala	Cys	Phe	Ala	Arg	Met	Val	Gly	Cys	Thr	Gly	Lys	Val	Ile	Gly	
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Ile Asp His Ile Lys Glu Leu Val Asp Asp Ser Val Asn Asn Val Arg	
110 115 120	

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Lys Asp Asp Pro Thr Leu Leu Ser Ser Gly Arg Val Gln Leu Val Val	
125 130 135 140	

ggg gat gga aga atg gga tat gct gaa gaa gcc cct tat gat gcc att	541
Gly Asp Gly Arg Met Gly Tyr Ala Glu Glu Ala Pro Tyr Asp Ala Ile	
145 150 155	

cat gtg gga gct gca gcc cct gtt gta ccc cag gcg cta ata gat cag	589
His Val Gly Ala Ala Ala Pro Val Val Pro Gln Ala Leu Ile Asp Gln	
160 165 170	

tta aag ccc gga gga aga ttg ata ttg cct gtt ggt cct gca ggc gga	637
Leu Lys Pro Gly Gly Arg Leu Ile Leu Pro Val Gly Pro Ala Gly Gly	
175 180 185	

aac caa atg ttg gag cag tat gac aag cta caa gat ggc agc atc aaa	685
Asn Gln Met Leu Glu Gln Tyr Asp Lys Leu Gln Asp Gly Ser Ile Lys	
190 195 200	

atg aag cct ctg atg ggg gtg ata tac gtg cct tta aca gat aaa gaa	733
Met Lys Pro Leu Met Gly Val Ile Tyr Val Pro Leu Thr Asp Lys Glu	
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Lys Gln Trp Ser Arg Trp Lys *	
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gctcatctca gtcctcaaag ctttttgaaa accaacacca tcacagcttg ttttggactt	907
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agaggcacag agccaaattg gtagaggaag gatgcaaagt ataaatttgt gtaatattac	1027
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ttaaagcttt tgatgtggtg tcatagaata gcatgttgta gatacaatca gctgctttgt	1327
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Ser Pro Gln Ser Ile Gly Phe Gln Ala Thr Ile Ser Ala Pro His Met	
50 55 60	

His Ala Tyr Ala Leu Glu Leu Leu Phe Asp Gln Leu His Glu Gly Ala  
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 Lys Ala Leu Asp Val Gly Ser Gly Ser Gly Ile Leu Thr Ala Cys Phe  
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 Ala Arg Met Val Gly Cys Thr Gly Lys Val Ile Gly Ile Asp His Ile  
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 Lys Glu Leu Val Asp Asp Ser Val Asn Asn Val Arg Lys Asp Asp Pro  
 115 120 125  
 Thr Leu Leu Ser Ser Gly Arg Val Gln Leu Val Val Gly Asp Gly Arg  
 130 135 140  
 Met Gly Tyr Ala Glu Glu Ala Pro Tyr Asp Ala Ile His Val Gly Ala  
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 Ala Ala Pro Val Val Pro Gln Ala Leu Ile Asp Gln Leu Lys Pro Gly  
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 Gly Arg Leu Ile Leu Pro Val Gly Pro Ala Gly Gly Asn Gln Met Leu  
 180 185 190  
 Glu Gln Tyr Asp Lys Leu Gln Asp Gly Ser Ile Lys Met Lys Pro Leu  
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 Ser Ser Ala Ser Ser Ala Ala Gln Ser Ser Lys Arg Glu Trp Lys Pro  
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 Leu Glu Asp Arg Ser Cys Thr Asp Ile Pro Trp Leu Leu Leu Phe Ile  
 25 30 35  
  
 ctc ttc tgc att ggg atg gga ttt att tgt ggc ttt tca ata gca aca 198  
 Leu Phe Cys Ile Gly Met Gly Phe Ile Cys Gly Phe Ser Ile Ala Thr  
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 Gly Ala Ala Ala Arg Leu Val Ser Gly Tyr Asp Ser Tyr Gly Asn Ile  
 55 60 65  
  
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 Cys Gly Gln Lys Asn Thr Lys Leu Glu Ala Ile Pro Asn Ser Gly Met  
 70 75 80  
  
 gac cac acc cag cgg aag tat gta ttc ttt ttg gat cca tgc aac ctg 342  
 Asp His Thr Gln Arg Lys Tyr Val Phe Phe Leu Asp Pro Cys Asn Leu  
 85 90 95 100

gac ttg ata aac cgg aag att aag tct gta gca ctg tgt gta gca gcg	390
Asp Leu Ile Asn Arg Lys Ile Lys Ser Val Ala Leu Cys Val Ala Ala	
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Cys Pro Arg Gln Glu Leu Lys Thr Leu Ser Asp Val Gln Lys Phe Ala	
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gag ata aat ggt tca gcc cta tgt agc tac aac cta aag cct tct gaa	486
Glu Ile Asn Gly Ser Ala Leu Cys Ser Tyr Asn Leu Lys Pro Ser Glu	
135 140 145	
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Tyr Thr Thr Ser Pro Lys Ser Ser Val Leu Cys Pro Lys Leu Pro Val	
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cca gcg agt gca cct att cca ttc ttc cat cgc tgt gct cct gtg aac	582
Pro Ala Ser Ala Pro Ile Pro Phe Phe His Arg Cys Ala Pro Val Asn	
165 170 175 180	
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Ile Ser Cys Tyr Ala Lys Phe Ala Glu Ala Leu Ile Thr Phe Val Ser	
185 190 195	
gac aat agt gtc tta cac agg ctg att agt gga gta atg acc agc aaa	678
Asp Asn Ser Val Leu His Arg Leu Ile Ser Gly Val Met Thr Ser Lys	
200 205 210	
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Glu Ile Ile Leu Gly Leu Cys Leu Leu Ser Leu Val Leu Ser Met Ile	
215 220 225	
ttg atg gtg ata atc agg tat ata tca aga gta ctt gtg tgg atc tta	774
Leu Met Val Ile Ile Arg Tyr Ile Ser Arg Val Leu Val Trp Ile Leu	
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Thr Ile Leu Val Ile Leu Gly Ser Leu Gly Gly Thr Gly Val Leu Trp	
245 250 255 260	
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Trp Leu Tyr Ala Lys Gln Arg Arg Ser Pro Lys Glu Thr Val Thr Pro	
265 270 275	
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Glu Gln Leu Gln Ile Ala Glu Asp Asn Leu Arg Ala Leu Leu Ile Tyr	
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gcc att tca gct aca gtg ttc aca gtg atc tta ttc ctg ata atg ttg	966
Ala Ile Ser Ala Thr Val Phe Thr Val Ile Leu Phe Leu Ile Met Leu	
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Val Met Arg Lys Arg Val Ala Leu Thr Ile Ala Leu Phe His Val Ala	
310 315 320	
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Gly Lys Val Phe Ile His Leu Pro Leu Leu Val Phe Gln Pro Phe Trp	
325 330 335 340	
act ttc ttt gct ctt gtc ttg ttt tgg gtg tac tgg atc atg aca ctt	1110
Thr Phe Phe Ala Leu Val Leu Phe Trp Val Tyr Trp Ile Met Thr Leu	

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Leu	Phe	Leu	Gly	Thr	Thr	Gly	Ser	Pro	Val	Gln	Asn	Glu	Gln	Gly	Phe					
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Val	Glu	Phe	Lys	Ile	Ser	Gly	Pro	Leu	Gln	Tyr	Met	Trp	Trp	Tyr	His					
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gtg	gtg	ggc	ctg	att	tgg	atc	agt	gaa	ttt	att	cta	gca	tgt	cag	cag	1254				
Val	Val	Gly	Leu	Ile	Trp	Ile	Ser	Glu	Phe	Ile	Leu	Ala	Cys	Gln	Gln					
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Arg	Asn	Leu	Pro	Phe	Thr	Pro	Ile	Leu	Ala	Ser	Val	Asn	Arg	Leu	Ile					
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cgt	tac	cac	cta	ggg	acg	gtg	gca	aaa	gga	tct	ttc	att	atc	aca	tta	1398				
Arg	Tyr	His	Leu	Gly	Thr	Val	Ala	Lys	Gly	Ser	Phe	Ile	Ile	Thr	Leu					
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gtc	aaa	att	ccg	cga	atg	atc	ctt	atg	tat	att	cac	agt	cag	ctc	aaa	1446				
Val	Lys	Ile	Pro	Arg	Met	Ile	Leu	Met	Tyr	Ile	His	Ser	Gln	Leu	Lys					
		455					460					465								
gga	aag	gaa	aat	gct	tgt	gca	cga	tgt	gtg	ctg	aaa	tct	tgc	att	tgt	1494				
Gly	Lys	Glu	Asn	Ala	Cys	Ala	Arg	Cys	Val	Leu	Lys	Ser	Cys	Ile	Cys					
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Cys	Leu	Trp	Cys	Leu	Glu	Lys	Cys	Leu	Asn	Tyr	Leu	Asn	Gln	Asn	Ala					
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Tyr	Thr	Ala	Thr	Ala	Ile	Asn	Ser	Thr	Asn	Phe	Cys	Thr	Ser	Ala	Lys					
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gat	gcc	ttt	gtc	att	ctg	gtg	gag	aat	gct	ttg	cga	gtg	gct	acc	atc	1638				
Asp	Ala	Phe	Val	Ile	Leu	Val	Glu	Asn	Ala	Leu	Arg	Val	Ala	Thr	Ile					
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Asn	Thr	Val	Gly	Asp	Phe	Met	Leu	Phe	Leu	Gly	Lys	Val	Leu	Ile	Val					
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tgc	agc	aca	ggg	tta	gct	ggg	att	atg	ctg	ctc	aac	tac	cag	cag	gac	1734				
Cys	Ser	Thr	Gly	Leu	Ala	Gly	Ile	Met	Leu	Leu	Asn	Tyr	Gln	Gln	Asp					
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tac	aca	gta	tgg	gtg	ctg	cct	ctg	atc	atc	gtc	tgc	ctc	ttt	gct	ttc	1782				
Tyr	Thr	Val	Trp	Val	Leu	Pro	Leu	Ile	Ile	Val	Cys	Leu	Phe	Ala	Phe					
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cta	gtc	gct	cat	tgc	ttc	ctg	tct	att	tat	gaa	atg	gta	gtg	gat	gta	1830				
Leu	Val	Ala	His	Cys	Phe	Leu	Ser	Ile	Tyr	Glu	Met	Val	Val	Asp	Val					
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600 605 610	
ggc aga gaa ttc tat atg gat aaa gtg ctg atg gag ttt gtg gaa aac	1926
Gly Arg Glu Phe Tyr Met Asp Lys Val Leu Met Glu Phe Val Glu Asn	
615 620 625	
agt agg aaa gca atg aaa gaa gct ggt aag gga ggc gtc gct gat tcc	1974
Ser Arg Lys Ala Met Lys Glu Ala Gly Lys Gly Gly Val Ala Asp Ser	
630 635 640	
aga gag cta aag ccg atg gct tgc gga gca agt tct gct tga	2016
Arg Glu Leu Lys Pro Met Ala Ser Gly Ala Ser Ser Ala *	
645 650 655	
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Lys	Leu	Pro	Val	Pro	Ala	Ser	Ala	Pro	Ile	Pro	Phe	Phe	His	Arg	Cys
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225					230					235					240
Val	Trp	Ile	Leu	Thr	Ile	Leu	Val	Ile	Leu	Gly	Ser	Leu	Gly	Gly	Thr
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Phe	His	Val	Ala	Gly	Lys	Val	Phe	Ile	His	Leu	Pro	Leu	Leu	Val	Phe
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Gln	Pro	Phe	Trp	Thr	Phe	Phe	Ala	Leu	Val	Leu	Phe	Trp	Val	Tyr	Trp
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Ile	Ile	Thr	Leu	Val	Lys	Ile	Pro	Arg	Met	Ile	Leu	Met	Tyr	Ile	His
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Ser	Gln	Leu	Lys	Gly	Lys	Glu	Asn	Ala	Cys	Ala	Arg	Cys	Val	Leu	Lys
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Ser	Cys	Ile	Cys	Cys	Leu	Trp	Cys	Leu	Glu	Lys	Cys	Leu	Asn	Tyr	Leu
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Asn	Gln	Asn	Ala	Tyr	Thr	Ala	Thr	Ala	Ile	Asn	Ser	Thr	Asn	Phe	Cys	
			500					505					510			
Thr	Ser	Ala	Lys	Asp	Ala	Phe	Val	Ile	Leu	Val	Glu	Asn	Ala	Leu	Arg	
		515					520					525				
Val	Ala	Thr	Ile	Asn	Thr	Val	Gly	Asp	Phe	Met	Leu	Phe	Leu	Gly	Lys	
		530				535					540					
Val	Leu	Ile	Val	Cys	Ser	Thr	Gly	Leu	Ala	Gly	Ile	Met	Leu	Leu	Asn	
545				550					555						560	
Tyr	Gln	Gln	Asp	Tyr	Thr	Val	Trp	Val	Leu	Pro	Leu	Ile	Ile	Val	Cys	
			565					570						575		
Leu	Phe	Ala	Phe	Leu	Val	Ala	His	Cys	Phe	Leu	Ser	Ile	Tyr	Glu	Met	
			580					585					590			
Val	Val	Asp	Val	Leu	Phe	Leu	Cys	Phe	Ala	Ile	Asp	Thr	Lys	Tyr	Asn	
		595					600					605				
Asp	Gly	Ser	Pro	Gly	Arg	Glu	Phe	Tyr	Met	Asp	Lys	Val	Leu	Met	Glu	
	610					615				620						
Phe	Val	Glu	Asn	Ser	Arg	Lys	Ala	Met	Lys	Glu	Ala	Gly	Lys	Gly	Gly	
625					630					635					640	
Val	Ala	Asp	Ser	Arg	Glu	Leu	Lys	Pro	Met	Ala	Ser	Gly	Ala	Ser	Ser	
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 <212> DNA  
 <213> Homo Sapiens

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 Arg Leu Ser Trp Gly Tyr Arg Glu His Asn Gly Pro Ile His Trp Lys  
 5 10 15

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 Glu Phe Phe Pro Ile Ala Asp Gly Asp Gln Gln Ser Pro Ile Glu Ile  
 20 25 30

aaa acc aaa gaa gtg aaa tat gac tct tcc ctc cga cca ctt agt atc 201  
 Lys Thr Lys Glu Val Lys Tyr Asp Ser Ser Leu Arg Pro Leu Ser Ile  
 35 40 45 50

aag tat gac cca agc tca gct aaa atc atc agc aac agc ggc cat tcc 249  
 Lys Tyr Asp Pro Ser Ser Ala Lys Ile Ile Ser Asn Ser Gly His Ser  
 55 60 65

ttc aat gtt gac ttt gat gac aca gag aac aaa tca gtt ctg cgt ggt 297  
 Phe Asn Val Asp Phe Asp Asp Thr Glu Asn Lys Ser Val Leu Arg Gly  
 70 75 80

ggc cct ctc act gga agc tac agg tta cgg cag gtt cac ctt cac tgg 345  
 Gly Pro Leu Thr Gly Ser Tyr Arg Leu Arg Gln Val His Leu His Trp  
 85 90 95

ggg tcc gct gat gac cac ggc tcc gag cac ata gta gat gga gtg agc 393  
 Gly Ser Ala Asp Asp His Gly Ser Glu His Ile Val Asp Gly Val Ser  
 100 105 110  
  
 tat gct gca gag ctc cat gtt gtt cac tgg aat tca gac aaa tac ccc 441  
 Tyr Ala Ala Glu Leu His Val Val His Trp Asn Ser Asp Lys Tyr Pro  
 115 120 125 130  
  
 agc ttt gtt gag gca gct cat gaa cca gat gga ctg gct gtc ttg gga 489  
 Ser Phe Val Glu Ala Ala His Glu Pro Asp Gly Leu Ala Val Leu Gly  
 135 140 145  
  
 gtg ttt tta cag att ggt gaa cct aat tcc caa ctg caa aag att act 537  
 Val Phe Leu Gln Ile Gly Glu Pro Asn Ser Gln Leu Gln Lys Ile Thr  
 150 155 160  
  
 gac act ttg gat tcc att aaa gaa aag ggt aaa caa act cga ttc aca 585  
 Asp Thr Leu Asp Ser Ile Lys Glu Lys Gly Lys Gln Thr Arg Phe Thr  
 165 170 175  
  
 aat ttt gac cta ttg tct ctg ctt cca cca tcc tgg gac tac tgg aca 633  
 Asn Phe Asp Leu Leu Ser Leu Leu Pro Pro Ser Trp Asp Tyr Trp Thr  
 180 185 190  
  
 tat cct ggt tct ctt aca gtt cca cct ctt ctt gag agt gtc aca tgg 681  
 Tyr Pro Gly Ser Leu Thr Val Pro Pro Leu Leu Glu Ser Val Thr Trp  
 195 200 205 210  
  
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 Ile Val Leu Lys Gln Pro Ile Asn Ile Ser Ser Gln Gln Leu Ala Lys  
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 Phe Arg Ser Leu Leu Cys Thr Ala Glu Gly Glu Ala Ala Ala Phe Leu  
 230 235 240  
  
 gtg agc aat cac cgc cca cca cag cct cta aag ggc cgc aaa gtg aga 825  
 Val Ser Asn His Arg Pro Pro Gln Pro Leu Lys Gly Arg Lys Val Arg  
 245 250 255  
  
 gcc tct ttc cat taa aaattgtcac caatgaactc ccccaaacat ggctgtggag 880  
 Ala Ser Phe His \*  
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 taatgttaat aatgaactgg ctaataattg acaagatgca gtgcctgcca gtttatgaca 1900  
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<213> Homo Sapiens

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Glu Ile Lys Thr Lys Glu Val Lys Tyr Asp Ser Ser Leu Arg Pro Leu
35          40          45
Ser Ile Lys Tyr Asp Pro Ser Ser Ala Lys Ile Ile Ser Asn Ser Gly
50          55          60
His Ser Phe Asn Val Asp Phe Asp Asp Thr Glu Asn Lys Ser Val Leu
65          70          75          80
Arg Gly Gly Pro Leu Thr Gly Ser Tyr Arg Leu Arg Gln Val His Leu
85          90          95
His Trp Gly Ser Ala Asp Asp His Gly Ser Glu His Ile Val Asp Gly
100         105         110
Val Ser Tyr Ala Ala Glu Leu His Val Val His Trp Asn Ser Asp Lys
115         120         125
Tyr Pro Ser Phe Val Glu Ala Ala His Glu Pro Asp Gly Leu Ala Val
130         135         140
Leu Gly Val Phe Leu Gln Ile Gly Glu Pro Asn Ser Gln Leu Gln Lys
145         150         155         160
Ile Thr Asp Thr Leu Asp Ser Ile Lys Glu Lys Gly Lys Gln Thr Arg
165         170         175
Phe Thr Asn Phe Asp Leu Leu Ser Leu Leu Pro Pro Ser Trp Asp Tyr
180         185         190
Trp Thr Tyr Pro Gly Ser Leu Thr Val Pro Pro Leu Leu Glu Ser Val
195         200         205
Thr Trp Ile Val Leu Lys Gln Pro Ile Asn Ile Ser Ser Gln Gln Leu
210         215         220

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Ala Lys Phe Arg Ser Leu Leu Cys Thr Ala Glu Gly Glu Ala Ala Ala  
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 Phe Leu Val Ser Asn His Arg Pro Pro Gln Pro Leu Lys Gly Arg Lys  
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 Val Arg Ala Ser Phe His  
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 Met Glu Ser Tyr His Lys Pro Asp Gln Gln Lys Leu Gln  
 1 5 10  
 gcc ttg aag gac acg gcc aac cgc cta cgt atc agc tcc atc cag gcc 157  
 Ala Leu Lys Asp Thr Ala Asn Arg Leu Arg Ile Ser Ser Ile Gln Ala  
 15 20 25  
 tcc tct gcg gcg ggc tct ggc cac ccc acg tca tgc tgc agc gcc gca 205  
 Ser Ser Ala Ala Gly Ser Gly His Pro Thr Ser Cys Cys Ser Ala Ala  
 30 35 40 45  
 gtg atc atg gct gtc ctc ttt ttc cac acc atg cgc tac aag tcc cag 253  
 Val Ile Met Ala Val Leu Phe Phe His Thr Met Arg Tyr Lys Ser Gln  
 50 55 60  
 gac ccc cgg aat ccg cac aat gac cgc ttt gtg ctc tcc aag ggc cat 301  
 Asp Pro Arg Asn Pro His Asn Asp Arg Phe Val Leu Ser Lys Gly His  
 65 70 75  
 gca gct ccc atc ctc tac gcg gtc tgg gct gaa gct ggt ttc ctg gcc 349  
 Ala Ala Pro Ile Leu Tyr Ala Val Trp Ala Glu Ala Gly Phe Leu Ala  
 80 85 90  
 gag gcg gag ctg ctg aac ctg agg aag atc agc tcc gac ttg gac ggg 397  
 Glu Ala Glu Leu Leu Asn Leu Arg Lys Ile Ser Ser Asp Leu Asp Gly  
 95 100 105  
 cac ccg gtc ccg aaa caa gct ttc acc gac gtg gcc act ggc tcc ctg 445  
 His Pro Val Pro Lys Gln Ala Phe Thr Asp Val Ala Thr Gly Ser Leu  
 110 115 120 125  
 ggc cag ggc ctc ggg gcc gct tgt ggg atg gcc tac acc ggc aaa tac 493  
 Gly Gln Gly Leu Gly Ala Ala Cys Gly Met Ala Tyr Thr Gly Lys Tyr  
 130 135 140  
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 Phe Asp Lys Ala Ser Tyr Arg Val Tyr Cys Leu Leu Gly Asp Gly Glu  
 145 150 155  
 ctg tca gag ggc tct gta tgg gag gcc atg gcc ttc gcc agc atc tat 589  
 Leu Ser Glu Gly Ser Val Trp Glu Ala Met Ala Phe Ala Ser Ile Tyr  
 160 165 170

aag ctg gac aac ctt gtg gcc att cta gac atc aat cgc ctg ggc cag	637
Lys Leu Asp Asn Leu Val Ala Ile Leu Asp Ile Asn Arg Leu Gly Gln	
175 180 185	
agt gac ccg gcc ccg ctg cag cac cag atg gac atc tac cag aag cgg	685
Ser Asp Pro Ala Pro Leu Gln His Gln Met Asp Ile Tyr Gln Lys Arg	
190 195 200 205	
tgc gag gcc ttc ggt tgg cat gcc atc atc gtg gat gga cac agc gtg	733
Cys Glu Ala Phe Gly Trp His Ala Ile Ile Val Asp Gly His Ser Val	
210 215 220	
gag gag ctg tgc aag gcc ttt ggc cag gcc aag cac cag cca aca gcc	781
Glu Glu Leu Cys Lys Ala Phe Gly Gln Ala Lys His Gln Pro Thr Ala	
225 230 235	
atc att gcc aag acc ttc aag ggc cga ggg atc acg ggg gta gaa gat	829
Ile Ile Ala Lys Thr Phe Lys Gly Arg Gly Ile Thr Gly Val Glu Asp	
240 245 250	
aag gag tct tgg cat ggg aag ccc ctc ccc aaa aac atg gct gag cag	877
Lys Glu Ser Trp His Gly Lys Pro Leu Pro Lys Asn Met Ala Glu Gln	
255 260 265	
atc atc cag gag atc tac agc cag atc cag agc aaa aag aag atc ctg	925
Ile Ile Gln Glu Ile Tyr Ser Gln Ile Gln Ser Lys Lys Lys Ile Leu	
270 275 280 285	
gca acc cct cca cag gag gac gca ccc tca gtg gac att gcc aac atc	973
Ala Thr Pro Pro Gln Glu Asp Ala Pro Ser Val Asp Ile Ala Asn Ile	
290 295 300	
cgc atg ccc agc ctg ccc agc tac aaa gtt ggg gac aag ata gcc acc	1021
Arg Met Pro Ser Leu Pro Ser Tyr Lys Val Gly Asp Lys Ile Ala Thr	
305 310 315	
cgc aag gcc tac ggg cag gca ctg gcc aag ctg ggc cat gcc agt gac	1069
Arg Lys Ala Tyr Gly Gln Ala Leu Ala Lys Leu Gly His Ala Ser Asp	
320 325 330	
cgc atc atc gcc ctg gat ggg gac acc aaa aat tcc acc ttc tcg gag	1117
Arg Ile Ile Ala Leu Asp Gly Asp Thr Lys Asn Ser Thr Phe Ser Glu	
335 340 345	
atc ttc aaa aag gag cac ccg gac cgc ttc atc gag tgc tac att gcc	1165
Ile Phe Lys Lys Glu His Pro Asp Arg Phe Ile Glu Cys Tyr Ile Ala	
350 355 360 365	
gag cag aac atg gtg agc atc gcg gtg ggc tgt gcc acc cgc aac agg	1213
Glu Gln Asn Met Val Ser Ile Ala Val Gly Cys Ala Thr Arg Asn Arg	
370 375 380	
acg gtg ccc ttc tgc agc act ttt gca gcc ttc ttc acg cgg gcc ttt	1261
Thr Val Pro Phe Cys Ser Thr Phe Ala Ala Phe Phe Thr Arg Ala Phe	
385 390 395	
gac cag att cgc atg gcg gcc atc tcc gag agc aac atc aac ctc tgc	1309
Asp Gln Ile Arg Met Ala Ala Ile Ser Glu Ser Asn Ile Asn Leu Cys	
400 405 410	
ggc tcc cac tgc ggc gtt tcc atc ggg gaa gac ggg gcc tcc cag atg	1357

Gly	Ser	His	Cys	Gly	Val	Ser	Ile	Gly	Glu	Asp	Gly	Ala	Ser	Gln	Met	
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gcc	cta	gaa	gat	ctg	gct	atg	ttt	cgg	tca	gtc	ccc	aca	tca	act	gtc	1405
Ala	Leu	Glu	Asp	Leu	Ala	Met	Phe	Arg	Ser	Val	Pro	Thr	Ser	Thr	Val	
430					435					440					445	
ttt	tac	cca	agt	gat	ggc	gtt	gct	aca	gag	aag	gca	gtg	gaa	cta	gcc	1453
Phe	Tyr	Pro	Ser	Asp	Gly	Val	Ala	Thr	Glu	Lys	Ala	Val	Glu	Leu	Ala	
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gcc	aat	aca	aag	ggg	atc	tgc	ttc	atc	cgg	acc	agc	cgc	cca	gaa	aat	1501
Ala	Asn	Thr	Lys	Gly	Ile	Cys	Phe	Ile	Arg	Thr	Ser	Arg	Pro	Glu	Asn	
			465					470					475			
gcc	atc	atc	tat	aac	aac	aat	gag	gac	ttc	cag	gtc	gga	caa	gcc	aag	1549
Ala	Ile	Ile	Tyr	Asn	Asn	Asn	Glu	Asp	Phe	Gln	Val	Gly	Gln	Ala	Lys	
			480				485					490				
gtg	gtc	ctg	aag	agc	aag	gat	gac	cag	gtg	acc	gtt	atc	ggg	gct	ggg	1597
Val	Val	Leu	Lys	Ser	Lys	Asp	Asp	Gln	Val	Thr	Val	Ile	Gly	Ala	Gly	
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Val	Thr	Leu	His	Glu	Ala	Leu	Ala	Ala	Ala	Glu	Leu	Leu	Lys	Lys	Glu	
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Lys	Ile	Asn	Ile	Arg	Val	Leu	Asp	Pro	Phe	Thr	Ile	Lys	Pro	Leu	Asp	
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aga	aaa	ctc	att	ctc	gac	agc	gct	cgt	gcc	acc	aag	ggc	agg	atc	ctc	1741
Arg	Lys	Leu	Ile	Leu	Asp	Ser	Ala	Arg	Ala	Thr	Lys	Gly	Arg	Ile	Leu	
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acc	gtg	gag	gac	cat	tat	tat	gaa	ggg	ggc	att	ggg	gag	gct	gtg	tcc	1789
Thr	Val	Glu	Asp	His	Tyr	Tyr	Glu	Gly	Gly	Ile	Gly	Glu	Ala	Val	Ser	
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Ser	Ala	Val	Val	Gly	Glu	Pro	Gly	Ile	Thr	Val	Thr	His	Leu	Ala	Val	
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aac	cgg	gta	cca	aga	agt	ggg	aag	cca	gct	gag	ctg	ctg	aag	atg	ttt	1885
Asn	Arg	Val	Pro	Arg	Ser	Gly	Lys	Pro	Ala	Glu	Leu	Leu	Lys	Met	Phe	
	590				595					600					605	
ggg	atc	gac	agg	gat	gcc	att	gca	caa	gct	gtg	agg	ggc	ctc	atc	acc	1933
Gly	Ile	Asp	Arg	Asp	Ala	Ile	Ala	Gln	Ala	Val	Arg	Gly	Leu	Ile	Thr	
				610					615					620		
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Lys	Ala	*														
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 <212> PRT



<213> Homo Sapiens

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			20					25					30		
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		35					40					45			
Ala	Val	Leu	Phe	Phe	His	Thr	Met	Arg	Tyr	Lys	Ser	Gln	Asp	Pro	Arg
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Asn	Pro	His	Asn	Asp	Arg	Phe	Val	Leu	Ser	Lys	Gly	His	Ala	Ala	Pro
65					70					75					80
Ile	Leu	Tyr	Ala	Val	Trp	Ala	Glu	Ala	Gly	Phe	Leu	Ala	Glu	Ala	Glu
				85					90					95	
Leu	Leu	Asn	Leu	Arg	Lys	Ile	Ser	Ser	Asp	Leu	Asp	Gly	His	Pro	Val
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Pro	Lys	Gln	Ala	Phe	Thr	Asp	Val	Ala	Thr	Gly	Ser	Leu	Gly	Gln	Gly
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Leu	Gly	Ala	Ala	Cys	Gly	Met	Ala	Tyr	Thr	Gly	Lys	Tyr	Phe	Asp	Lys
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Gly	Ser	Val	Trp	Glu	Ala	Met	Ala	Phe	Ala	Ser	Ile	Tyr	Lys	Leu	Asp
				165					170					175	
Asn	Leu	Val	Ala	Ile	Leu	Asp	Ile	Asn	Arg	Leu	Gly	Gln	Ser	Asp	Pro
			180					185					190		
Ala	Pro	Leu	Gln	His	Gln	Met	Asp	Ile	Tyr	Gln	Lys	Arg	Cys	Glu	Ala
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Phe	Gly	Trp	His	Ala	Ile	Ile	Val	Asp	Gly	His	Ser	Val	Glu	Glu	Leu
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Cys	Lys	Ala	Phe	Gly	Gln	Ala	Lys	His	Gln	Pro	Thr	Ala	Ile	Ile	Ala
225					230					235					240
Lys	Thr	Phe	Lys	Gly	Arg	Gly	Ile	Thr	Gly	Val	Glu	Asp	Lys	Glu	Ser
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Trp	His	Gly	Lys	Pro	Leu	Pro	Lys	Asn	Met	Ala	Glu	Gln	Ile	Ile	Gln
			260					265					270		
Glu	Ile	Tyr	Ser	Gln	Ile	Gln	Ser	Lys	Lys	Lys	Ile	Leu	Ala	Thr	Pro
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Pro	Gln	Glu	Asp	Ala	Pro	Ser	Val	Asp	Ile	Ala	Asn	Ile	Arg	Met	Pro
	290					295					300				
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Cys	Gly	Val	Ser	Ile	Gly	Glu	Asp	Gly	Ala	Ser	Gln	Met	Ala	Leu	Glu
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Lys Ser Lys Asp Asp Gln Val Thr Val Ile Gly Ala Gly Val Thr Leu						
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His Glu Ala Leu Ala Ala Ala Glu Leu Leu Lys Lys Glu Lys Ile Asn						
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Ile Arg Val Leu Asp Pro Phe Thr Ile Lys Pro Leu Asp Arg Lys Leu						
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Ile Leu Asp Ser Ala Arg Ala Thr Lys Gly Arg Ile Leu Thr Val Glu						
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Val Gly Glu Pro Gly Ile Thr Val Thr His Leu Ala Val Asn Arg Val						
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Pro Arg Ser Gly Lys Pro Ala Glu Leu Leu Lys Met Phe Gly Ile Asp						
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 Met Cys Gly Ile Phe Ala Tyr Leu Asn Tyr His Val Pro Arg Thr  
 1 5 10 15  
  
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 Arg Arg Glu Ile Leu Glu Thr Leu Ile Lys Gly Leu Gln Arg Leu Glu  
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 Tyr Arg Gly Tyr Asp Ser Ala Gly Val Gly Phe Asp Gly Gly Asn Asp  
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 Gly Lys Val Lys Ala Leu Asp Glu Glu Val His Lys Gln Gln Asp Met  
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 gat ttg gat ata gaa ttt gat gta cac ctt gga ata gct cat acc cgt 407  
 Asp Leu Asp Ile Glu Phe Asp Val His Leu Gly Ile Ala His Thr Arg  
 80 85 90 95  
  
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 Trp Ala Thr His Gly Glu Pro Ser Pro Val Asn Ser His Pro Gln Arg  
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 tct gat aaa aat aat gaa ttt atc gtt att cac aat gga atc atc acc 503

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Asn	Tyr	Lys	Asp	Leu	Lys	Lys	Phe	Leu	Glu	Ser	Lys	Gly	Tyr	Asp	Phe		
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Glu	Ser	Glu	Thr	Asp	Thr	Glu	Thr	Ile	Ala	Lys	Leu	Val	Lys	Tyr	Met		
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Val	His	Phe	Pro	Gly	Gln	Ala	Val	Gly	Thr	Arg	Arg	Gly	Ser	Pro	Leu		
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Leu	Ile	Gly	Val	Arg	Ser	Glu	His	Lys	Leu	Ser	Thr	Asp	His	Ile	Pro		
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Arg	Val	Asp	Ser	Thr	Thr	Cys	Leu	Phe	Pro	Val	Glu	Glu	Lys	Ala	Val		
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gag	tat	tac	ttt	gct	tct	gat	gca	agt	gct	gtc	ata	gaa	cac	acc	aat	935	
Glu	Tyr	Tyr	Phe	Ala	Ser	Asp	Ala	Ser	Ala	Val	Ile	Glu	His	Thr	Asn		
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Arg	Leu	Ser	Ile	His	Arg	Ile	Lys	Arg	Thr	Ala	Gly	Asp	His	Pro	Gly		
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Val	Val	Asn	Thr	Met	Arg	Gly	Arg	Val	Asn	Phe	Asp	Asp	Tyr	Thr	Val		
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Asn	Leu	Gly	Gly	Leu	Lys	Asp	His	Ile	Lys	Glu	Ile	Gln	Arg	Cys	Arg		
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Arg Leu Ile Leu Ile Ala Cys Gly Thr Ser Tyr His Ala Gly Val Ala	
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Thr Arg Gln Val Leu Glu Glu Leu Thr Glu Leu Pro Val Met Val Glu	
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Leu Ala Ser Asp Phe Leu Asp Arg Asn Thr Pro Val Phe Arg Asp Asp	
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Val Cys Phe Phe Leu Ser Gln Ser Gly Glu Thr Ala Asp Thr Leu Met	
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Gly Leu Arg Tyr Cys Lys Glu Arg Gly Ala Leu Thr Val Gly Ile Thr	
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Asn Thr Val Gly Ser Ser Ile Ser Arg Glu Thr Asp Cys Gly Val His	
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Gln Lys Leu Ala Thr Glu Leu Tyr His Gln Lys Ser Val Leu Ile Met	
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Gly Arg Gly Tyr His Tyr Ala Thr Cys Leu Glu Gly Ala Leu Lys Ile	
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Ile Ile Met Arg Asp His Thr Tyr Ala Lys Cys Gln Asn Ala Leu Gln	
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Leu	Ala	Phe	His	Leu	Ala	Val	Leu	Arg	Gly	Tyr	Asp	Val	Asp	Phe	Pro		
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Asp	Trp	Glu	Ala	Asn	Ala	Cys	Lys	Thr	Gln	Leu	Ile	Lys	Lys	Lys	Gly		
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Leu	Asp	Ile	Glu	Phe	Asp	Val	His	Leu	Gly	Ile	Ala	His	Thr	Arg	Trp		
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Ala	Thr	His	Gly	Glu	Pro	Ser	Pro	Val	Asn	Ser	His	Pro	Gln	Arg	Ser		
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Tyr	Lys	Asp	Leu	Lys	Lys	Phe	Leu	Glu	Ser	Lys	Gly	Tyr	Asp	Phe	Glu		
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Ser	Glu	Thr	Asp	Thr	Glu	Thr	Ile	Ala	Lys	Leu	Val	Lys	Tyr	Met	Tyr		
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670

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Ile	Gly	Leu	Ala	Leu	Cys	Lys	Arg	Leu	Leu	Ala	Glu	Asp	Asp	Glu	Leu	
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cat	ctg	tgt	ttg	gcg	tgc	agg	aac	atg	agc	aag	gca	gaa	gct	gtc	tgt	146
His	Leu	Cys	Leu	Ala	Cys	Arg	Asn	Met	Ser	Lys	Ala	Glu	Ala	Val	Cys	
	30				35					40					45	
gct	gct	ctg	ctg	gcc	tct	cac	ccc	act	gct	gag	gtc	acc	att	gtc	cag	194
Ala	Ala	Leu	Leu	Ala	Ser	His	Pro	Thr	Ala	Glu	Val	Thr	Ile	Val	Gln	
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gtg	gat	gtc	agc	aac	ctg	cag	tcg	gtc	ttc	cgg	gcc	tcc	aag	gaa	ctt	242
Val	Asp	Val	Ser	Asn	Leu	Gln	Ser	Val	Phe	Arg	Ala	Ser	Lys	Glu	Leu	
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Lys	Gln	Arg	Phe	Gln	Arg	Leu	Asp	Cys	Ile	Tyr	Leu	Asn	Ala	Gly	Ile	
	80						85					90				
atg	cct	aat	cca	caa	cta	aat	atc	aaa	gca	ctt	ttc	ttt	ggc	ctc	ttt	338
Met	Pro	Asn	Pro	Gln	Leu	Asn	Ile	Lys	Ala	Leu	Phe	Phe	Gly	Leu	Phe	
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tca	aga	aaa	gtg	att	cat	atg	ttc	tcc	aca	gct	gaa	ggc	ctg	ctg	acc	386
Ser	Arg	Lys	Val	Ile	His	Met	Phe	Ser	Thr	Ala	Glu	Gly	Leu	Leu	Thr	
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Gln	Gly	Asp	Lys	Ile	Thr	Ala	Asp	Gly	Leu	Gln	Glu	Val	Phe	Glu	Thr	
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Asn	Val	Phe	Gly	His	Phe	Ile	Leu	Ile	Arg	Glu	Leu	Glu	Pro	Leu	Leu	
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Cys	His	Ser	Asp	Asn	Pro	Ser	Gln	Leu	Ile	Trp	Thr	Ser	Ser	Arg	Ser	
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gca	agg	aaa	tct													

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Lys Glu Pro Tyr Ser Ser Lys Tyr Ala Thr Asp Leu Leu Ser Val
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Ala Leu Asn Arg Asn Phe Asn Gln Gln Gly Leu Tyr Ser Asn Val Ala
210 215 220

tgt cca ggt aca gca ttg acc aat ttg aca tat gga att ctg cct ccg 722
Cys Pro Gly Thr Ala Leu Thr Asn Leu Thr Tyr Gly Ile Leu Pro Pro
225 230 235

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Phe Ile Trp Thr Leu Leu Met Pro Ala Ile Leu Leu Leu Arg Phe Phe
240 245 250

gca aat gca ttc act ttg aca cca tat aat gga aca gaa gct ctg gta 818
Ala Asn Ala Phe Thr Leu Thr Pro Tyr Asn Gly Thr Glu Ala Leu Val
255 260 265

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Trp Leu Phe His Gln Lys Pro Glu Ser Leu Asn Pro Leu Ile Lys Tyr
270 275 280 285

ctg agt gcc acc act ggc ttt gga aga aat tat att atg acc cag aag 914
Leu Ser Ala Thr Thr Gly Phe Gly Arg Asn Tyr Ile Met Thr Gln Lys
290 295 300

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Met Asp Leu Asp Glu Asp Thr Ala Glu Lys Phe Tyr Gln Lys Leu Leu
305 310 315

gaa ctg gaa aag cac att agg gtc act att caa aaa aca gat aat cag 1010
Glu Leu Glu Lys His Ile Arg Val Thr Ile Gln Lys Thr Asp Asn Gln
320 325 330

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Ala Arg Leu Ser Gly Ser Cys Leu *
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35 40 45
Leu Ala Ser His Pro Thr Ala Glu Val Thr Ile Val Gln Val Asp Val

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Asn	Thr	Met	Arg	Glu	Val	Asn	Leu	Leu	Pro	Asp	Asn	Leu	Leu	Asn	Arg		
	60					65					70						
cct	tca	gtg	gga	ttg	gtt	cag	agt	tgg	tat	atg	cag	agt	ttt	ctt	gaa	292	
Pro	Ser	Val	Gly	Leu	Val	Gln	Ser	Trp	Tyr	Met	Gln	Ser	Phe	Leu	Glu		
	75				80					85					90		
ctt	tta	gaa	tat	gaa	aat	aag	agc	cct	gag	gat	cca	cag	gtc	ttg	gat	340	
Leu	Leu	Glu	Tyr	Glu	Asn	Lys	Ser	Pro	Glu	Asp	Pro	Gln	Val	Leu	Asp		
				95					100					105			
aac	ttt	cta	caa	gtt	ctg	att	aaa	gtc	aga	aat	aga	cac	aat	gat	gtg	388	
Asn	Phe	Leu	Gln	Val	Leu	Ile	Lys	Val	Arg	Asn	Arg	His	Asn	Asp	Val		
			110					115					120				
gtt	cct	aca	atg	gca	caa	gga	gtg	att	gaa	tac	aag	gag	aag	ttt	ggg	436	
Val	Pro	Thr	Met	Ala	Gln	Gly	Val	Ile	Glu	Tyr	Lys	Glu	Lys	Phe	Gly		
		125				130						135					
ttt	gat	cct	ttc	att	agc	act	aac	atc	caa	tat	ttt	ctg	gat	cgg	ttt	484	
Phe	Asp	Pro	Phe	Ile	Ser	Thr	Asn	Ile	Gln	Tyr	Phe	Leu	Asp	Arg	Phe		
	140					145					150						
tat	acc	aac	cgc	atc	tct	ttc	cgc	atg	ctt	att	aat	cag	cac	aca	ctt	532	
Tyr	Thr	Asn	Arg	Ile	Ser	Phe	Arg	Met	Leu	Ile	Asn	Gln	His	Thr	Leu		
	155				160					165					170		
ctg	ttt	ggg	ggg	gac	act	aat	cct	gtt	cat	cct	aaa	cac	ata	gga	agt	580	
Leu	Phe	Gly	Gly	Asp	Thr	Asn	Pro	Val	His	Pro	Lys	His	Ile	Gly	Ser		
				175					180					185			
atc	gat	ccc	acc	tgt	aac	gtg	gcg	gat	gtg	gtg	aaa	gat	gca	tat	gaa	628	
Ile	Asp	Pro	Thr	Cys	Asn	Val	Ala	Asp	Val	Val	Lys	Asp	Ala	Tyr	Glu		
			190					195					200				
aca	gcc	aag	atg	ctg	tgt	gaa	cag	tat	tac	ctg	gta	gct	cca	gag	ctg	676	
Thr	Ala	Lys	Met	Leu	Cys	Glu	Gln	Tyr	Tyr	Leu	Val	Ala	Pro	Glu	Leu		
		205					210					215					
gaa	gtt	gaa	gaa	ttc	aat	gcc	aaa	gcg	cca	gac	aaa	cct	att	cag	gtg	724	
Glu	Val	Glu	Glu	Phe	Asn	Ala	Lys	Ala	Pro	Asp	Lys	Pro	Ile	Gln	Val		
		220				225					230						
gtt	tat	gtg	ccc	tca	cat	ctg	ttt	cat	atg	cta	ttt	gag	ttg	ttc	aag	772	
Val	Tyr	Val	Pro	Ser	His	Leu	Phe	His	Met	Leu	Phe	Glu	Leu	Phe	Lys		
	235				240					245					250		
aac	tca	atg	aga	gcg	aca	gtt	gaa	ctc	tat	gaa	gac	aga	aaa	gag	ggc	820	
Asn	Ser	Met	Arg	Ala	Thr	Val	Glu	Leu	Tyr	Glu	Asp	Arg	Lys	Glu	Gly		
				255					260					265			
tac	cct	gct	gtt	aaa	acc	ctc	gtt	act	ttg	ggg	aaa	gaa	gac	tta	tcc	868	
Tyr	Pro	Ala	Val	Lys	Thr	Leu	Val	Thr	Leu	Gly	Lys	Glu	Asp	Leu	Ser		
			270					275					280				
att	aag	atc	agt	gac	cta	ggg	ggg	ggg	gtc	cca	ctt	cga	aaa	ata	gat	916	
Ile	Lys	Ile	Ser	Asp	Leu	Gly	Gly	Gly	Val	Pro	Leu	Arg	Lys	Ile	Asp		
		285				290						295					

cgt ctt ttt aac tac atg tat tct act gct cct agg ccc agc ctg gag 964  
 Arg Leu Phe Asn Tyr Met Tyr Ser Thr Ala Pro Arg Pro Ser Leu Glu  
 300 305 310

cct acc aga gct gcc cct ttg gct gga ttt ggt tat ggt ttg cca att 1012  
 Pro Thr Arg Ala Ala Pro Leu Ala Gly Phe Gly Tyr Gly Leu Pro Ile  
 315 320 325 330

tcc cgt ctg tat gct aga tat ttt caa gga gat ctg aaa ctg tat tcc 1060  
 Ser Arg Leu Tyr Ala Arg Tyr Phe Gln Gly Asp Leu Lys Leu Tyr Ser  
 335 340 345

atg gaa gga gtg ggt act gat gct gtc att tat ttg aag gct ctt tca 1108  
 Met Glu Gly Val Gly Thr Asp Ala Val Ile Tyr Leu Lys Ala Leu Ser  
 350 355 360

agt gag tca ttt gag aga ctt cca gtt ttt aat aag tcc gca tgg cgc 1156  
 Ser Glu Ser Phe Glu Arg Leu Pro Val Phe Asn Lys Ser Ala Trp Arg  
 365 370 375

cat tac aag acc acg cct gaa gcc gat gat tgg agc aat ccc agc agt 1204  
 His Tyr Lys Thr Thr Pro Glu Ala Asp Asp Trp Ser Asn Pro Ser Ser  
 380 385 390

gaa ccc agg gat gct tca aaa tac aaa gca aaa cag taa tataccacct 1253  
 Glu Pro Arg Asp Ala Ser Lys Tyr Lys Ala Lys Gln \*  
 395 400 405

tgatttccat tacaaagtat ctgatttgtc tgaataaagg tgtccactc actgttccag 1313  
 gaattcttgc agtgtagagg tattcacaac agcaagcagg gatttggcct gccatcaatt 1373  
 ttatttaaaa agcaattaag tttgcagttt gtcctcataa acgttgtagg ttgaaactga 1433  
 aaaataagtt aaaatgatca atcaagataa aaggtgatct atccatccaa tggaatatta 1493  
 tttggcctta aaaaggaagg acatctgata tgtgctgcaa catgggtgaa tcttgaagtc 1553  
 attatgctaa gtgaaataaa ccagacataa aaggacaaat acatcg 1599

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 <211> 406  
 <212> PRT  
 <213> Homo Sapiens

<400> 16  
 Met Arg Leu Phe Arg Trp Leu Leu Lys Gln Pro Val Pro Lys Gln Ile  
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 Glu Arg Tyr Ser Arg Phe Ser Pro Ser Pro Leu Ser Ile Lys Gln Phe  
 20 25 30  
 Leu Asp Phe Gly Arg Asp Asn Ala Cys Glu Lys Thr Ser Tyr Met Phe  
 35 40 45  
 Leu Arg Lys Glu Leu Pro Val Arg Leu Ala Asn Thr Met Arg Glu Val  
 50 55 60  
 Asn Leu Leu Pro Asp Asn Leu Leu Asn Arg Pro Ser Val Gly Leu Val  
 65 70 75 80  
 Gln Ser Trp Tyr Met Gln Ser Phe Leu Glu Leu Leu Glu Tyr Glu Asn  
 85 90 95  
 Lys Ser Pro Glu Asp Pro Gln Val Leu Asp Asn Phe Leu Gln Val Leu  
 100 105 110  
 Ile Lys Val Arg Asn Arg His Asn Asp Val Val Pro Thr Met Ala Gln  
 115 120 125  
 Gly Val Ile Glu Tyr Lys Glu Lys Phe Gly Phe Asp Pro Phe Ile Ser  
 130 135 140  
 Thr Asn Ile Gln Tyr Phe Leu Asp Arg Phe Tyr Thr Asn Arg Ile Ser  
 145 150 155 160

Phe	Arg	Met	Leu	Ile	Asn	Gln	His	Thr	Leu	Leu	Phe	Gly	Gly	Asp	Thr		
				165					170					175			
Asn	Pro	Val	His	Pro	Lys	His	Ile	Gly	Ser	Ile	Asp	Pro	Thr	Cys	Asn		
			180					185					190				
Val	Ala	Asp	Val	Val	Lys	Asp	Ala	Tyr	Glu	Thr	Ala	Lys	Met	Leu	Cys		
		195					200					205					
Glu	Gln	Tyr	Tyr	Leu	Val	Ala	Pro	Glu	Leu	Glu	Val	Glu	Glu	Phe	Asn		
		210				215					220						
Ala	Lys	Ala	Pro	Asp	Lys	Pro	Ile	Gln	Val	Val	Tyr	Val	Pro	Ser	His		
225					230					235					240		
Leu	Phe	His	Met	Leu	Phe	Glu	Leu	Phe	Lys	Asn	Ser	Met	Arg	Ala	Thr		
			245						250					255			
Val	Glu	Leu	Tyr	Glu	Asp	Arg	Lys	Glu	Gly	Tyr	Pro	Ala	Val	Lys	Thr		
			260					265					270				
Leu	Val	Thr	Leu	Gly	Lys	Glu	Asp	Leu	Ser	Ile	Lys	Ile	Ser	Asp	Leu		
		275				280						285					
Gly	Gly	Gly	Val	Pro	Leu	Arg	Lys	Ile	Asp	Arg	Leu	Phe	Asn	Tyr	Met		
		290				295					300						
Tyr	Ser	Thr	Ala	Pro	Arg	Pro	Ser	Leu	Glu	Pro	Thr	Arg	Ala	Ala	Pro		
305					310					315					320		
Leu	Ala	Gly	Phe	Gly	Tyr	Gly	Leu	Pro	Ile	Ser	Arg	Leu	Tyr	Ala	Arg		
			325					330						335			
Tyr	Phe	Gln	Gly	Asp	Leu	Lys	Leu	Tyr	Ser	Met	Glu	Gly	Val	Gly	Thr		
		340						345					350				
Asp	Ala	Val	Ile	Tyr	Leu	Lys	Ala	Leu	Ser	Ser	Glu	Ser	Phe	Glu	Arg		
		355					360					365					
Leu	Pro	Val	Phe	Asn	Lys	Ser	Ala	Trp	Arg	His	Tyr	Lys	Thr	Thr	Pro		
		370				375					380						
Glu	Ala	Asp	Asp	Trp	Ser	Asn	Pro	Ser	Ser	Glu	Pro	Arg	Asp	Ala	Ser		
385					390					395					400		
Lys	Tyr	Lys	Ala	Lys	Gln												
				405													

<210> 17  
 <211> 1767  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)...(1767)

<400> 17																
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Met	Ser	Ser	Cys	Val	Ser	Ser	Gln	Pro	Ser	Ser	Asn	Arg	Ala	Ala	Pro	
1				5					10					15		
cag	gat	gag	ctg	ggg	ggc	agg	ggc	agc	agc	agc	agc	gaa	agc	cag	aag	96
Gln	Asp	Glu	Leu	Gly	Gly	Arg	Gly	Ser	Ser	Ser	Ser	Glu	Ser	Gln	Lys	
			20					25					30			
ccc	tgt	gag	gcc	ctg	cgg	ggc	ctc	tca	tcc	ttg	agc	atc	cac	ctg	ggc	144
Pro	Cys	Glu	Ala	Leu	Arg	Gly	Leu	Ser	Ser	Leu	Ser	Ile	His	Leu	Gly	
			35				40					45				
atg	gag	tcc	ttc	att	gtg	gtc	acc	gag	tgt	gag	ccg	ggc	tgt	gct	gtg	192
Met	Glu	Ser	Phe	Ile	Val	Val	Thr	Glu	Cys	Glu	Pro	Gly	Cys	Ala	Val	
		50				55					60					
gac	ctc	ggc	ttg	gcg	cgg	gac	cgg	ccc	ctg	gag	gcc	gat	ggc	caa	gag	240
Asp	Leu	Gly	Leu	Ala	Arg	Asp	Arg	Pro	Leu	Glu	Ala	Asp	Gly	Gln	Glu	

65						70						75						80	
gtc ccc ctt gac tcc tcc ggg tcc cag gcc cgg ccc cac ctc tcc ggt	288																		
Val Pro Leu Asp Ser Ser Gly Ser Gln Ala Arg Pro His Leu Ser Gly																			
85 90 95																			
cgc aag ctg tct ctg caa gag cgg tcc cag ggt ggg ctg gca gcc ggt	336																		
Arg Lys Leu Ser Leu Gln Glu Arg Ser Gln Gly Gly Leu Ala Ala Gly																			
100 105 110																			
ggc agc ctg gac atg aac gga cgc tgc atc tgc ccg tcc ctg ccc tac	384																		
Gly Ser Leu Asp Met Asn Gly Arg Cys Ile Cys Pro Ser Leu Pro Tyr																			
115 120 125																			
tca ccc gtc agc tcc ccg cag tcc tcg cct cgg ctg ccc cgg cgg ccg	432																		
Ser Pro Val Ser Ser Pro Gln Ser Ser Pro Arg Leu Pro Arg Arg Pro																			
130 135 140																			
aca gtg gag tct cac cac gtc tcc atc acg ggt atg cag gac tgt gtg	480																		
Thr Val Glu Ser His His Val Ser Ile Thr Gly Met Gln Asp Cys Val																			
145 150 155 160																			
cag ctg aat cag tat acc ctg aag gat gaa att gga aag ggc tcc tat	528																		
Gln Leu Asn Gln Tyr Thr Leu Lys Asp Glu Ile Gly Lys Gly Ser Tyr																			
165 170 175																			
ggt gtc gtc aag ttg gcc tac aat gaa aat gac aat acc tac tat gca	576																		
Gly Val Val Lys Leu Ala Tyr Asn Glu Asn Asp Asn Thr Tyr Tyr Ala																			
180 185 190																			
atg aag gtg ctg tcc aaa aag aag ctg atc cgg cag gcc ggc ttt cca	624																		
Met Lys Val Leu Ser Lys Lys Lys Leu Ile Arg Gln Ala Gly Phe Pro																			
195 200 205																			
cgt cgc cct cca ccc cga ggc acc cgg cca gct cct gga ggc tgc atc	672																		
Arg Arg Pro Pro Pro Arg Gly Thr Arg Pro Ala Pro Gly Gly Cys Ile																			
210 215 220																			
cag ccc agg ggc ccc att gag cag gtg tac cag gaa att gcc atc ctc	720																		
Gln Pro Arg Gly Pro Ile Glu Gln Val Tyr Gln Glu Ile Ala Ile Leu																			
225 230 235 240																			
aag aag ctg gac cac ccc aat gtg gtg aag ctg gtg gag gtc ctg gat	768																		
Lys Lys Leu Asp His Pro Asn Val Val Lys Leu Val Glu Val Leu Asp																			
245 250 255																			
gac ccc aat gag gac cat ctg tac atg gtg ttc gaa ctg gtc aac caa	816																		
Asp Pro Asn Glu Asp His Leu Tyr Met Val Phe Glu Leu Val Asn Gln																			
260 265 270																			
ggg ccc gtg atg gaa gtg ccc acc ctc aaa cca ctc tct gaa gac cag	864																		
Gly Pro Val Met Glu Val Pro Thr Leu Lys Pro Leu Ser Glu Asp Gln																			
275 280 285																			
gcc cgt ttc tac ttc cag gat ctg atc aaa ggc atc gag tac tta cac	912																		
Ala Arg Phe Tyr Phe Gln Asp Leu Ile Lys Gly Ile Glu Tyr Leu His																			
290 295 300																			
tac cag aag atc atc cac cgt gac atc aaa cct tcc aac ctc ctg gtc	960																		
Tyr Gln Lys Ile Ile His Arg Asp Ile Lys Pro Ser Asn Leu Leu Val																			
305 310 315 320																			

gga gaa gat ggg cac atc aag atc gct gac ttt ggt gtg agc aat gaa	1008
Gly Glu Asp Gly His Ile Lys Ile Ala Asp Phe Gly Val Ser Asn Glu	
325 330 335	
ttc aag ggc agt gac gcg ctc ctc tcc aac acc gtg ggc acg ccc gcc	1056
Phe Lys Gly Ser Asp Ala Leu Leu Ser Asn Thr Val Gly Thr Pro Ala	
340 345 350	
ttc atg gca ccc gag tcg ctc tct gag acc cgc aag atc ttc tct ggg	1104
Phe Met Ala Pro Glu Ser Leu Ser Glu Thr Arg Lys Ile Phe Ser Gly	
355 360 365	
aag gcc ttg gat gtt tgg gcc atg ggt gtg aca cta tac tgc ttt gtc	1152
Lys Ala Leu Asp Val Trp Ala Met Gly Val Thr Leu Tyr Cys Phe Val	
370 375 380	
ttt ggc cag tgc cca ttc atg gac gag cgg atc atg tgt tta cac agt	1200
Phe Gly Gln Cys Pro Phe Met Asp Glu Arg Ile Met Cys Leu His Ser	
385 390 395 400	
aag atc aag agt cag gcc ctg gaa ttt cca gac cag ccc gac ata gct	1248
Lys Ile Lys Ser Gln Ala Leu Glu Phe Pro Asp Gln Pro Asp Ile Ala	
405 410 415	
gag gac ttg aag gac ctg atc acc cgt atg ctg gac aag aac ccc gag	1296
Glu Asp Leu Lys Asp Leu Ile Thr Arg Met Leu Asp Lys Asn Pro Glu	
420 425 430	
tcg agg atc gtg gtg ccg gaa atc aag ctg cac ccc tgg gtc acg agg	1344
Ser Arg Ile Val Val Pro Glu Ile Lys Leu His Pro Trp Val Thr Arg	
435 440 445	
cat ggg gcg gag ccg ttg ccg tcg gag gat gag aac tgc acg ctg gtc	1392
His Gly Ala Glu Pro Leu Pro Ser Glu Asp Glu Asn Cys Thr Leu Val	
450 455 460	
gaa gtg act gaa gag gag gtc gag aac tca gtc aaa cac att ccc agc	1440
Glu Val Thr Glu Glu Glu Val Glu Asn Ser Val Lys His Ile Pro Ser	
465 470 475 480	
ttg gca acc gtg atc ctg gtg aag acc atg ata cgt aaa cgc tcc ttt	1488
Leu Ala Thr Val Ile Leu Val Lys Thr Met Ile Arg Lys Arg Ser Phe	
485 490 495	
ggg aac cca ttc gag ggc agc cgg cgg gag gaa cgc tca ctg tca gcg	1536
Gly Asn Pro Phe Glu Gly Ser Arg Arg Glu Glu Arg Ser Leu Ser Ala	
500 505 510	
cct gga aac ttg ctc acc aaa aaa cca acc agg gaa tgt gag tcc ctg	1584
Pro Gly Asn Leu Leu Thr Lys Lys Pro Thr Arg Glu Cys Glu Ser Leu	
515 520 525	
tct gag ctc aag gaa gca agg cag cga aga caa cct cca ggg cac cga	1632
Ser Glu Leu Lys Glu Ala Arg Gln Arg Arg Gln Pro Pro Gly His Arg	
530 535 540	
ccc gcc ccc cgt ggg gga gga gga agt gct ctt gtg aga ggc agt ccc	1680
Pro Ala Pro Arg Gly Gly Gly Gly Ser Ala Leu Val Arg Gly Ser Pro	
545 550 555 560	
tgc gtg gaa agt tgc tgg gcc ccc gcc ccc ggc tcc ccc gca cgc atg	1728
Cys Val Glu Ser Cys Trp Ala Pro Ala Pro Gly Ser Pro Ala Arg Met	

565

570

575

cat cca ctg cgg ccg gag gag gcc atg gag ccc gag tag  
 His Pro Leu Arg Pro Glu Glu Ala Met Glu Pro Glu \*  
 580 585

1767

&lt;210&gt; 18

&lt;211&gt; 588

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 18

Met Ser Ser Cys Val Ser Ser Gln Pro Ser Ser Asn Arg Ala Ala Pro  
 1 5 10 15  
 Gln Asp Glu Leu Gly Gly Arg Gly Ser Ser Ser Ser Glu Ser Gln Lys  
 20 25 30  
 Pro Cys Glu Ala Leu Arg Gly Leu Ser Ser Leu Ser Ile His Leu Gly  
 35 40 45  
 Met Glu Ser Phe Ile Val Val Thr Glu Cys Glu Pro Gly Cys Ala Val  
 50 55 60  
 Asp Leu Gly Leu Ala Arg Asp Arg Pro Leu Glu Ala Asp Gly Gln Glu  
 65 70 75 80  
 Val Pro Leu Asp Ser Ser Gly Ser Gln Ala Arg Pro His Leu Ser Gly  
 85 90 95  
 Arg Lys Leu Ser Leu Gln Glu Arg Ser Gln Gly Gly Leu Ala Ala Gly  
 100 105 110  
 Gly Ser Leu Asp Met Asn Gly Arg Cys Ile Cys Pro Ser Leu Pro Tyr  
 115 120 125  
 Ser Pro Val Ser Ser Pro Gln Ser Ser Pro Arg Leu Pro Arg Arg Pro  
 130 135 140  
 Thr Val Glu Ser His His Val Ser Ile Thr Gly Met Gln Asp Cys Val  
 145 150 155 160  
 Gln Leu Asn Gln Tyr Thr Leu Lys Asp Glu Ile Gly Lys Gly Ser Tyr  
 165 170 175  
 Gly Val Val Lys Leu Ala Tyr Asn Glu Asn Asp Asn Thr Tyr Tyr Ala  
 180 185 190  
 Met Lys Val Leu Ser Lys Lys Lys Leu Ile Arg Gln Ala Gly Phe Pro  
 195 200 205  
 Arg Arg Pro Pro Pro Arg Gly Thr Arg Pro Ala Pro Gly Gly Cys Ile  
 210 215 220  
 Gln Pro Arg Gly Pro Ile Glu Gln Val Tyr Gln Glu Ile Ala Ile Leu  
 225 230 235 240  
 Lys Lys Leu Asp His Pro Asn Val Val Lys Leu Val Glu Val Leu Asp  
 245 250 255  
 Asp Pro Asn Glu Asp His Leu Tyr Met Val Phe Glu Leu Val Asn Gln  
 260 265 270  
 Gly Pro Val Met Glu Val Pro Thr Leu Lys Pro Leu Ser Glu Asp Gln  
 275 280 285  
 Ala Arg Phe Tyr Phe Gln Asp Leu Ile Lys Gly Ile Glu Tyr Leu His  
 290 295 300  
 Tyr Gln Lys Ile Ile His Arg Asp Ile Lys Pro Ser Asn Leu Leu Val  
 305 310 315 320  
 Gly Glu Asp Gly His Ile Lys Ile Ala Asp Phe Gly Val Ser Asn Glu  
 325 330 335  
 Phe Lys Gly Ser Asp Ala Leu Leu Ser Asn Thr Val Gly Thr Pro Ala  
 340 345 350  
 Phe Met Ala Pro Glu Ser Leu Ser Glu Thr Arg Lys Ile Phe Ser Gly  
 355 360 365  
 Lys Ala Leu Asp Val Trp Ala Met Gly Val Thr Leu Tyr Cys Phe Val  
 370 375 380  
 Phe Gly Gln Cys Pro Phe Met Asp Glu Arg Ile Met Cys Leu His Ser

385		390		395		400
Lys Ile Lys Ser Gln Ala Leu Glu Phe Pro Asp Gln Pro Asp Ile Ala						
	405			410		415
Glu Asp Leu Lys Asp Leu Ile Thr Arg Met Leu Asp Lys Asn Pro Glu						
	420		425		430	
Ser Arg Ile Val Val Pro Glu Ile Lys Leu His Pro Trp Val Thr Arg						
	435		440		445	
His Gly Ala Glu Pro Leu Pro Ser Glu Asp Glu Asn Cys Thr Leu Val						
	450		455		460	
Glu Val Thr Glu Glu Glu Val Glu Asn Ser Val Lys His Ile Pro Ser						
	465		470		475	480
Leu Ala Thr Val Ile Leu Val Lys Thr Met Ile Arg Lys Arg Ser Phe						
	485		490			495
Gly Asn Pro Phe Glu Gly Ser Arg Arg Glu Glu Arg Ser Leu Ser Ala						
	500		505		510	
Pro Gly Asn Leu Leu Thr Lys Lys Pro Thr Arg Glu Cys Glu Ser Leu						
	515		520		525	
Ser Glu Leu Lys Glu Ala Arg Gln Arg Arg Gln Pro Pro Gly His Arg						
	530		535		540	
Pro Ala Pro Arg Gly Gly Gly Ser Ala Leu Val Arg Gly Ser Pro						
	545		550		555	560
Cys Val Glu Ser Cys Trp Ala Pro Ala Pro Gly Ser Pro Ala Arg Met						
	565		570			575
His Pro Leu Arg Pro Glu Glu Ala Met Glu Pro Glu						
	580		585			

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 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (91)...(972)

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 attataaggc tgtctgcaga gatttgaaaa atg gca aca aat gaa agt gtc agc 114  
 Met Ala Thr Asn Glu Ser Val Ser  
 1 5

atc ttt agt tca gca tcc ttg gct gtg gaa tat gta gat tca ctt tta 162  
 Ile Phe Ser Ser Ala Ser Leu Ala Val Glu Tyr Val Asp Ser Leu Leu  
 10 15 20

cct gag aat cct ctg caa gaa cca ttt aaa aat gct tgg aac tat atg 210  
 Pro Glu Asn Pro Leu Gln Glu Pro Phe Lys Asn Ala Trp Asn Tyr Met  
 25 30 35 40

ttg aat aat tat aca aag ttc cag att gca aca tgg gga tcc ctt ata 258  
 Leu Asn Asn Tyr Thr Lys Phe Gln Ile Ala Thr Trp Gly Ser Leu Ile  
 45 50 55

gtt cat gaa gcc ctt tat ttc tta ttc tgt tta cct gga ttt tta ttt 306  
 Val His Glu Ala Leu Tyr Phe Leu Phe Cys Leu Pro Gly Phe Leu Phe  
 60 65 70

caa ttt ata cct tat atg aaa aaa tac aaa att caa aag gat aag cca 354  
 Gln Phe Ile Pro Tyr Met Lys Lys Tyr Lys Ile Gln Lys Asp Lys Pro  
 75 80 85



gag aca tgg gaa aac caa tgg aag tgt ttc aaa gtt ctt ctc ttt aat	402
Glu Thr Trp Glu Asn Gln Trp Lys Cys Phe Lys Val Leu Leu Phe Asn	
90 95 100	
cac ttc tgt atc cag ctg cct ttg att tgt gga acc tat tat ttt aca	450
His Phe Cys Ile Gln Leu Pro Leu Ile Cys Gly Thr Tyr Tyr Phe Thr	
105 110 115 120	
gag tat ttc aat att cct tat gat tgg gaa aga atg cca aga tgg tat	498
Glu Tyr Phe Asn Ile Pro Tyr Asp Trp Glu Arg Met Pro Arg Trp Tyr	
125 130 135	
ttt ctt ttg gca aga tgc ttt ggt tgt gca gtc att gaa gat act tgg	546
Phe Leu Leu Ala Arg Cys Phe Gly Cys Ala Val Ile Glu Asp Thr Trp	
140 145 150	
cac tat ttt ctg cat aga ctc tta cac cac aaa aga ata tac aag tat	594
His Tyr Phe Leu His Arg Leu Leu His His Lys Arg Ile Tyr Lys Tyr	
155 160 165	
att cat aaa gtt cat cat gag ttt cag gct cca ttt gga atg gaa gct	642
Ile His Lys Val His His Glu Phe Gln Ala Pro Phe Gly Met Glu Ala	
170 175 180	
gaa tat gca cat cct ttg gag act cta att ctt gga act gga ttt ttc	690
Glu Tyr Ala His Pro Leu Glu Thr Leu Ile Leu Gly Thr Gly Phe Phe	
185 190 195 200	
att gga atc gtg ctt ttg tgt gat cat gta att ctt ctt tgg gca tgg	738
Ile Gly Ile Val Leu Leu Cys Asp His Val Ile Leu Leu Trp Ala Trp	
205 210 215	
gtg acc att cgt tta tta gaa act att gat gtc cat agt ggt tat gat	786
Val Thr Ile Arg Leu Leu Glu Thr Ile Asp Val His Ser Gly Tyr Asp	
220 225 230	
att cct ctc aac cct tta aat ctg atc cct ttc tat gct ggt tct cgg	834
Ile Pro Leu Asn Pro Leu Asn Leu Ile Pro Phe Tyr Ala Gly Ser Arg	
235 240 245	
cat cat gat ttc cac cac atg aac ttc att gga aac tat gct tca aca	882
His His Asp Phe His His Met Asn Phe Ile Gly Asn Tyr Ala Ser Thr	
250 255 260	
ttt aca tgg tgg gat cga att ttt gga aca gac tct cag tat aat gcc	930
Phe Thr Trp Trp Asp Arg Ile Phe Gly Thr Asp Ser Gln Tyr Asn Ala	
265 270 275 280	
tat aat gaa aag agg aag aag ttt gag aaa aag act gaa taa	972
Tyr Asn Glu Lys Arg Lys Lys Phe Glu Lys Lys Thr Glu *	
285 290	
atatctcacg taaaccttcc tgaaagataa acgttttcct gaattcagaa actagtagct	1032
aacattgctt ctggagagca gaaataagca tgtcttctgg ctactaagtg ataaaaagaa	1092
cattaacaac ctttaattac cttccttagtg ggaacttttt ctactttacc tacaagttct	1152
atatatgtag aaatgaataa atatataattt aagtacagtt ttcattgagga agtttttaaaa	1212
gaccatgttc ctaagcttcc aagaaggttt tggatactag aagtattaat ctatggcttt	1272
tctcccagta aaaccatagg cctgaagttc acattgggtc tttaaatcct ttagatatat	1332
actgggtcatt tcagaaaatt cttcatagtg gtattggcct tatattttaac ttttttttta	1392
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 Val Glu Tyr Val Asp Ser Leu Leu Pro Glu Asn Pro Leu Gln Glu Pro  
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 Phe Lys Asn Ala Trp Asn Tyr Met Leu Asn Asn Tyr Thr Lys Phe Gln  
 35 40 45  
 Ile Ala Thr Trp Gly Ser Leu Ile Val His Glu Ala Leu Tyr Phe Leu  
 50 55 60  
 Phe Cys Leu Pro Gly Phe Leu Phe Gln Phe Ile Pro Tyr Met Lys Lys  
 65 70 75 80  
 Tyr Lys Ile Gln Lys Asp Lys Pro Glu Thr Trp Glu Asn Gln Trp Lys  
 85 90 95  
 Cys Phe Lys Val Leu Leu Phe Asn His Phe Cys Ile Gln Leu Pro Leu  
 100 105 110  
 Ile Cys Gly Thr Tyr Tyr Phe Thr Glu Tyr Phe Asn Ile Pro Tyr Asp  
 115 120 125  
 Trp Glu Arg Met Pro Arg Trp Tyr Phe Leu Leu Ala Arg Cys Phe Gly  
 130 135 140  
 Cys Ala Val Ile Glu Asp Thr Trp His Tyr Phe Leu His Arg Leu Leu  
 145 150 155 160  
 His His Lys Arg Ile Tyr Lys Tyr Ile His Lys Val His His Glu Phe  
 165 170 175  
 Gln Ala Pro Phe Gly Met Glu Ala Glu Tyr Ala His Pro Leu Glu Thr  
 180 185 190  
 Leu Ile Leu Gly Thr Gly Phe Phe Ile Gly Ile Val Leu Leu Cys Asp  
 195 200 205  
 His Val Ile Leu Leu Trp Ala Trp Val Thr Ile Arg Leu Leu Glu Thr  
 210 215 220  
 Ile Asp Val His Ser Gly Tyr Asp Ile Pro Leu Asn Pro Leu Asn Leu  
 225 230 235 240  
 Ile Pro Phe Tyr Ala Gly Ser Arg His His Asp Phe His His Met Asn  
 245 250 255  
 Phe Ile Gly Asn Tyr Ala Ser Thr Phe Thr Trp Trp Asp Arg Ile Phe  
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 Gly Thr Asp Ser Gln Tyr Asn Ala Tyr Asn Glu Lys Arg Lys Lys Phe  
 275 280 285  
 Glu Lys Lys Thr Glu  
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<220>  
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 <222> (37)...(870)

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 gaa tgc atg gat tat gca gta act cta gca aga caa gct gga gag gta 102  
 Glu Cys Met Asp Tyr Ala Val Thr Leu Ala Arg Gln Ala Gly Glu Val

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gtt	tgt	gaa	gct	ata	aaa	aat	gaa	atg	aat	gtt	atg	ctg	aaa	agt	tct	150
Val	Cys	Glu	Ala	Ile	Lys	Asn	Glu	Met	Asn	Val	Met	Leu	Lys	Ser	Ser	
		25					30					35				
cca	gtt	gat	ttg	gta	act	gct	acg	gac	caa	aaa	gtt	gaa	aaa	atg	ctt	198
Pro	Val	Asp	Leu	Val	Thr	Ala	Thr	Asp	Gln	Lys	Val	Glu	Lys	Met	Leu	
	40					45					50					
atc	tct	tcc	ata	aag	gaa	aag	tat	cca	tct	cac	agt	ttc	att	ggg	gaa	246
Ile	Ser	Ser	Ile	Lys	Glu	Lys	Tyr	Pro	Ser	His	Ser	Phe	Ile	Gly	Glu	
	55				60					65					70	
gaa	tct	gtg	gca	gct	ggg	gaa	aaa	agt	atc	tta	acc	gac	aac	ccc	aca	294
Glu	Ser	Val	Ala	Ala	Gly	Glu	Lys	Ser	Ile	Leu	Thr	Asp	Asn	Pro	Thr	
			75						80					85		
tgg	atc	att	gac	cct	att	gat	gga	aca	act	aac	ttt	gta	cat	aga	ttt	342
Trp	Ile	Ile	Asp	Pro	Ile	Asp	Gly	Thr	Thr	Asn	Phe	Val	His	Arg	Phe	
			90					95					100			
cct	ttt	gta	gct	gtt	tca	att	ggc	ttt	gct	gta	aat	aaa	aag	ata	gaa	390
Pro	Phe	Val	Ala	Val	Ser	Ile	Gly	Phe	Ala	Val	Asn	Lys	Lys	Ile	Glu	
		105					110					115				
ttt	gga	gtt	gtg	tac	agt	tgt	gtg	gaa	ggc	aag	atg	tac	act	gcc	aga	438
Phe	Gly	Val	Val	Tyr	Ser	Cys	Val	Glu	Gly	Lys	Met	Tyr	Thr	Ala	Arg	
	120					125					130					
aaa	gga	aaa	ggg	gcc	ttt	tgt	aat	ggg	caa	aaa	cta	caa	gtt	tca	caa	486
Lys	Gly	Lys	Gly	Ala	Phe	Cys	Asn	Gly	Gln	Lys	Leu	Gln	Val	Ser	Gln	
	135				140					145					150	
caa	gaa	gat	att	acc	aaa	tct	ctc	ttg	gtg	act	gag	ttg	ggc	tct	tct	534
Gln	Glu	Asp	Ile	Thr	Lys	Ser	Leu	Leu	Val	Thr	Glu	Leu	Gly	Ser	Ser	
				155					160					165		
aga	aca	cca	gag	act	gtg	aga	atg	gtt	ctt	tct	aat	atg	gaa	aag	ctt	582
Arg	Thr	Pro	Glu	Thr	Val	Arg	Met	Val	Leu	Ser	Asn	Met	Glu	Lys	Leu	
			170					175					180			
ttt	tgc	att	cct	gtt	cat	ggg	atc	cgg	agt	gtt	gga	aca	gca	gct	gtt	630
Phe	Cys	Ile	Pro	Val	His	Gly	Ile	Arg	Ser	Val	Gly	Thr	Ala	Ala	Val	
		185					190					195				
aat	atg	tgc	ctt	gtg	gca	act	ggc	gga	gca	gat	gca	tat	tat	gaa	atg	678
Asn	Met	Cys	Leu	Val	Ala	Thr	Gly	Gly	Ala	Asp	Ala	Tyr	Tyr	Glu	Met	
	200					205					210					
gga	att	cac	tgc	tgg	gat	gtt	gca	gga	gct	ggc	att	att	gtt	act	gaa	726
Gly	Ile	His	Cys	Trp	Asp	Val	Ala	Gly	Ala	Gly	Ile	Ile	Val	Thr	Glu	
	215				220					225					230	
gct	ggg	ggc	gtg	cta	atg	gat	gtt	aca	ggg	gga	cca	ttt	gat	ttg	atg	774
Ala	Gly	Gly	Val	Leu	Met	Asp	Val	Thr	Gly	Gly	Pro	Phe	Asp	Leu	Met	
			235						240					245		
tca	cga	aga	gta	att	gct	gca	aat	aat	aga	ata	tta	gca	gaa	agg	ata	822
Ser	Arg	Arg	Val	Ile	Ala	Ala	Asn	Asn	Arg	Ile	Leu	Ala	Glu	Arg	Ile	
			250				255						260			

gct aaa gaa att cag gtt ata cct ttg caa cga gac gac gaa gat taa 870  
 Ala Lys Glu Ile Gln Val Ile Pro Leu Gln Arg Asp Asp Glu Asp \*  
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 <211> 277  
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 <213> Homo Sapiens

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           20                          25                          30  
 Val Met Leu Lys Ser Ser Pro Val Asp Leu Val Thr Ala Thr Asp Gln  
           35                          40                          45  
 Lys Val Glu Lys Met Leu Ile Ser Ser Ile Lys Glu Lys Tyr Pro Ser  
   50                          55                          60  
 His Ser Phe Ile Gly Glu Ser Val Ala Ala Gly Glu Lys Ser Ile  
  65                          70                          75                          80  
 Leu Thr Asp Asn Pro Thr Trp Ile Ile Asp Pro Ile Asp Gly Thr Thr  
           85                          90                          95  
 Asn Phe Val His Arg Phe Pro Phe Val Ala Val Ser Ile Gly Phe Ala  
          100                         105                         110  
 Val Asn Lys Lys Ile Glu Phe Gly Val Val Tyr Ser Cys Val Glu Gly  
          115                         120                         125  
 Lys Met Tyr Thr Ala Arg Lys Gly Lys Gly Ala Phe Cys Asn Gly Gln  
  130                         135                         140  
 Lys Leu Gln Val Ser Gln Gln Glu Asp Ile Thr Lys Ser Leu Leu Val  
  145                         150                         155                         160  
 Thr Glu Leu Gly Ser Ser Arg Thr Pro Glu Thr Val Arg Met Val Leu  
          165                         170                         175  
 Ser Asn Met Glu Lys Leu Phe Cys Ile Pro Val His Gly Ile Arg Ser  
          180                         185                         190  
 Val Gly Thr Ala Ala Val Asn Met Cys Leu Val Ala Thr Gly Gly Ala  
          195                         200                         205  
 Asp Ala Tyr Tyr Glu Met Gly Ile His Cys Trp Asp Val Ala Gly Ala  
  210                         215                         220  
 Gly Ile Ile Val Thr Glu Ala Gly Gly Val Leu Met Asp Val Thr Gly  
  225                         230                         235                         240  
 Gly Pro Phe Asp Leu Met Ser Arg Arg Val Ile Ala Ala Asn Asn Arg  
          245                         250                         255  
 Ile Leu Ala Glu Arg Ile Ala Lys Glu Ile Gln Val Ile Pro Leu Gln  
          260                         265                         270  
 Arg Asp Asp Glu Asp  
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<220>  
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 <222> (214)...(5871)

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cgctccgga gacgcttccc gatagatggc tacaggccgc ggaggaggag gaggtggagt	180
tgctgccctt ccggagtcgc ccccgtagagg aga atg tcc cag aaa tcc tgg ata	234
Met Ser Gln Lys Ser Trp Ile	
1 5	
gaa agc act ttg acc aag agg gaa tgt gta tat att ata cca agt tcc	282
Glu Ser Thr Leu Thr Lys Arg Glu Cys Val Tyr Ile Ile Pro Ser Ser	
10 15 20	
aag gac cct cac aga tgc ctt cca gga tgt caa att tgt cag caa ctc	330
Lys Asp Pro His Arg Cys Leu Pro Gly Cys Gln Ile Cys Gln Gln Leu	
25 30 35	
gtc agg tgt ttt tgt ggt cgc ttg gtc aag caa cat gct tgt ttt act	378
Val Arg Cys Phe Cys Gly Arg Leu Val Lys Gln His Ala Cys Phe Thr	
40 45 50 55	
gca agt ctt gcc atg aaa tac tca gat gtg aaa ttg ggt gac cat ttt	426
Ala Ser Leu Ala Met Lys Tyr Ser Asp Val Lys Leu Gly Asp His Phe	
60 65 70	
aat cag gca ata gaa gaa tgg tct gtg gaa aag cat aca gaa cag agc	474
Asn Gln Ala Ile Glu Glu Trp Ser Val Glu Lys His Thr Glu Gln Ser	
75 80 85	
cca acg gat gct tat gga gtc ata aat ttt caa ggg ggt tct cat tcc	522
Pro Thr Asp Ala Tyr Gly Val Ile Asn Phe Gln Gly Gly Ser His Ser	
90 95 100	
tac aga gct aag tat gtg agg cta tca tat gac acc aaa cct gaa gtc	570
Tyr Arg Ala Lys Tyr Val Arg Leu Ser Tyr Asp Thr Lys Pro Glu Val	
105 110 115	
att ctg caa ctt ctg ctt aaa gaa tgg caa atg gag tta ccc aaa ctt	618
Ile Leu Gln Leu Leu Leu Lys Glu Trp Gln Met Glu Leu Pro Lys Leu	
120 125 130 135	
gtt atc tct gta cat ggg ggc atg cag aaa ttt gag ctt cac cca cga	666
Val Ile Ser Val His Gly Gly Met Gln Lys Phe Glu Leu His Pro Arg	
140 145 150	
atc aag cag ttg ctt gga aaa ggt ctt att aaa gct gca gtt aca act	714
Ile Lys Gln Leu Leu Gly Lys Gly Leu Ile Lys Ala Ala Val Thr Thr	
155 160 165	
gga gcc tgg att tta act gga gga gta aac aca ggt gtg gca aaa cat	762
Gly Ala Trp Ile Leu Thr Gly Gly Val Asn Thr Gly Val Ala Lys His	
170 175 180	
gtt gga gat gcc ctc aaa gaa cat gct tcc aga tca tct cga aag att	810
Val Gly Asp Ala Leu Lys Glu His Ala Ser Arg Ser Ser Arg Lys Ile	
185 190 195	
tgc act atc gga ata gct cca tgg gga gtg att gaa aac aga aat gat	858
Cys Thr Ile Gly Ile Ala Pro Trp Gly Val Ile Glu Asn Arg Asn Asp	
200 205 210 215	
ctt gtt ggg aga gat gtg gtt gct cct tat caa acc tta ttg aac ccc	906
Leu Val Gly Arg Asp Val Val Ala Pro Tyr Gln Thr Leu Leu Asn Pro	
220 225 230	
ctg agc aaa ttg aat gtt ttg aat aat ctg cat tcc cat ttc ata ttg	954

Leu	Ser	Lys	Leu	Asn	Val	Leu	Asn	Asn	Leu	His	Ser	His	Phe	Ile	Leu	
			235					240					245			
gtg	gat	gat	ggc	act	gtt	gga	aag	tat	ggg	gcg	gaa	gtc	aga	ctg	aga	1002
Val	Asp	Asp	Gly	Thr	Val	Gly	Lys	Tyr	Gly	Ala	Glu	Val	Arg	Leu	Arg	
		250					255					260				
aga	gaa	ctt	gaa	aaa	act	att	aat	cag	caa	aga	att	cat	gct	agg	att	1050
Arg	Glu	Leu	Glu	Lys	Thr	Ile	Asn	Gln	Gln	Arg	Ile	His	Ala	Arg	Ile	
	265					270					275					
ggc	cag	ggt	gtc	cct	gtg	gtg	gca	ctt	ata	ttt	gag	ggt	ggg	cca	aat	1098
Gly	Gln	Gly	Val	Pro	Val	Val	Ala	Leu	Ile	Phe	Glu	Gly	Gly	Pro	Asn	
280					285				290						295	
gtt	atc	ctc	aca	gtt	ctt	gaa	tac	ctt	cag	gaa	agc	ccc	cct	gtt	cca	1146
Val	Ile	Leu	Thr	Val	Leu	Glu	Tyr	Leu	Gln	Glu	Ser	Pro	Pro	Val	Pro	
			300					305					310			
gta	gtt	gtg	tgt	gaa	gga	aca	ggc	aga	gct	gca	gat	ctg	cta	gcg	tat	1194
Val	Val	Val	Cys	Glu	Gly	Thr	Gly	Arg	Ala	Ala	Asp	Leu	Leu	Ala	Tyr	
		315					320					325				
att	cat	aaa	caa	aca	gaa	gaa	gga	ggg	aat	ctt	cct	gat	gca	gca	ggg	1242
Ile	His	Lys	Gln	Thr	Glu	Glu	Gly	Gly	Asn	Leu	Pro	Asp	Ala	Ala	Gly	
		330					335					340				
cac	gat	att	att	tcc	act	atc	aaa	aaa	aca	ttt	aac	ttt	ggc	cag	aat	1290
His	Asp	Ile	Ile	Ser	Thr	Ile	Lys	Lys	Thr	Phe	Asn	Phe	Gly	Gln	Asn	
	345					350					355					
gaa	gca	ctt	cat	tta	ttt	caa	aca	ctg	atg	gag	tgc	atg	aaa	aga	aag	1338
Glu	Ala	Leu	His	Leu	Phe	Gln	Thr	Leu	Met	Glu	Cys	Met	Lys	Arg	Lys	
360					365				370						375	
gag	ctt	atc	act	gtt	ttc	cat	att	ggg	tca	gat	gaa	cat	caa	gat	ata	1386
Glu	Leu	Ile	Thr	Val	Phe	His	Ile	Gly	Ser	Asp	Glu	His	Gln	Asp	Ile	
			380					385					390			
gat	gta	gca	ata	ctt	act	gca	ctg	cta	aaa	ggt	act	aat	gca	tct	gca	1434
Asp	Val	Ala	Ile	Leu	Thr	Ala	Leu	Leu	Lys	Gly	Thr	Asn	Ala	Ser	Ala	
			395					400					405			
ttt	gac	cag	ctt	atc	ctt	aca	ttg	gca	tgg	ggt	aga	gtt	gac	att	gcc	1482
Phe	Asp	Gln	Leu	Ile	Leu	Thr	Leu	Ala	Trp	Gly	Arg	Val	Asp	Ile	Ala	
	410						415					420				
aaa	aat	cat	gta	ttt	gtt	tat	gga	cag	cag	tgg	ctg	gtt	gga	tcc	ttg	1530
Lys	Asn	His	Val	Phe	Val	Tyr	Gly	Gln	Gln	Trp	Leu	Val	Gly	Ser	Leu	
	425					430					435					
gaa	caa	gct	atg	ctt	gat	gct	ctt	gta	atg	gat	aga	gtt	gca	ttt	gta	1578
Glu	Gln	Ala	Met	Leu	Asp	Ala	Leu	Val	Met	Asp	Arg	Val	Ala	Phe	Val	
440					445				450						455	
aaa	ctt	ctt	att	gaa	aat	gga	gta	agc	atg	cat	aaa	ttc	ctt	acc	att	1626
Lys	Leu	Leu	Ile	Glu	Asn	Gly	Val	Ser	Met	His	Lys	Phe	Leu	Thr	Ile	
			460						465					470		
ccg	aga	ctg	gaa	gaa	ctt	tac	aac	act	aaa	caa	ggt	cca	act	aat	cca	1674
Pro	Arg	Leu	Glu	Glu	Leu	Tyr	Asn	Thr	Lys	Gln	Gly	Pro	Thr	Asn	Pro	
		475						480					485			

atg ctg ttt cat ctt gtt cga gac gtc aaa cag gga aat ctt cct cca	1722
Met Leu Phe His Leu Val Arg Asp Val Lys Gln Gly Asn Leu Pro Pro	
490 495 500	
gga tat aag atc act ctg att gat ata gga ctt gtt att gaa tat ctc	1770
Gly Tyr Lys Ile Thr Leu Ile Asp Ile Gly Leu Val Ile Glu Tyr Leu	
505 510 515	
atg gga gga acc tac aga tgc acc tat act agg aaa cgt ttt cga tta	1818
Met Gly Gly Thr Tyr Arg Cys Thr Tyr Thr Arg Lys Arg Phe Arg Leu	
520 525 530 535	
ata tat aat agt ctt ggt gga aat aat cgg agg tct ggc cga aat acc	1866
Ile Tyr Asn Ser Leu Gly Gly Asn Asn Arg Arg Ser Gly Arg Asn Thr	
540 545 550	
tcc agc agc act cct cag ttg cga aag agt cat gaa tct ttt ggc aat	1914
Ser Ser Ser Thr Pro Gln Leu Arg Lys Ser His Glu Ser Phe Gly Asn	
555 560 565	
agg gca gat aaa aag gaa aaa atg agg cat aac cat ttc att aag aca	1962
Arg Ala Asp Lys Lys Glu Lys Met Arg His Asn His Phe Ile Lys Thr	
570 575 580	
gca cag ccc tac cga cca aag att gat aca gtt atg gaa gaa gga aag	2010
Ala Gln Pro Tyr Arg Pro Lys Ile Asp Thr Val Met Glu Glu Gly Lys	
585 590 595	
aag aaa aga acc aaa gat gaa att gta gac att gat gat cca gaa acc	2058
Lys Lys Arg Thr Lys Asp Glu Ile Val Asp Ile Asp Asp Pro Glu Thr	
600 605 610 615	
aag cgc ttt cct tat cca ctt aat gaa ctt tta att tgg gct tgc ctt	2106
Lys Arg Phe Pro Tyr Pro Leu Asn Glu Leu Leu Ile Trp Ala Cys Leu	
620 625 630	
atg aag agg cag gtc atg gcc cgt ttt tta tgg caa cat ggt gaa gaa	2154
Met Lys Arg Gln Val Met Ala Arg Phe Leu Trp Gln His Gly Glu Glu	
635 640 645	
tca atg gct aaa gca tta gtt gcc tgt aag atc tat cgt tca atg gca	2202
Ser Met Ala Lys Ala Leu Val Ala Cys Lys Ile Tyr Arg Ser Met Ala	
650 655 660	
tat gaa gca aag cag agt gac ctg gta gat gat act tca gaa gaa cta	2250
Tyr Glu Ala Lys Gln Ser Asp Leu Val Asp Asp Thr Ser Glu Glu Leu	
665 670 675	
aaa cag tat tcc aat gat ttt ggt cag ttg gcc gtt gaa tta tta gaa	2298
Lys Gln Tyr Ser Asn Asp Phe Gly Gln Leu Ala Val Glu Leu Leu Glu	
680 685 690 695	
cag tcc ttc aga caa gat gaa acc atg gct atg aaa ttg ctc act tat	2346
Gln Ser Phe Arg Gln Asp Glu Thr Met Ala Met Lys Leu Leu Thr Tyr	
700 705 710	
gaa ctg aag aac tgg agt aat tca acc tgc ctt aag tta gca gtt tct	2394
Glu Leu Lys Asn Trp Ser Asn Ser Thr Cys Leu Lys Leu Ala Val Ser	
715 720 725	
tca aga ctt aga cct ttt gta gct cac acc tgt aca caa atg ttg tta	2442

Ser	Arg	Leu	Arg	Pro	Phe	Val	Ala	His	Thr	Cys	Thr	Gln	Met	Leu	Leu	
		730					735					740				
tct	gat	atg	tgg	atg	gga	agg	ctg	aat	atg	agg	aaa	aat	tcc	tgg	tac	2490
Ser	Asp	Met	Trp	Met	Gly	Arg	Leu	Asn	Met	Arg	Lys	Asn	Ser	Trp	Tyr	
	745					750					755					
aag	gtc	ata	cta	agc	att	tta	gtt	cca	cct	gcc	ata	ttg	ctg	tta	gag	2538
Lys	Val	Ile	Leu	Ser	Ile	Leu	Val	Pro	Pro	Ala	Ile	Leu	Leu	Leu	Glu	
760					765					770					775	
tat	aaa	act	aag	gct	gaa	atg	tcc	cat	atc	cca	caa	tct	caa	gat	gct	2586
Tyr	Lys	Thr	Lys	Ala	Glu	Met	Ser	His	Ile	Pro	Gln	Ser	Gln	Asp	Ala	
				780					785					790		
cat	cag	atg	tca	atg	gat	gac	agc	gaa	aac	aac	ttt	cag	aac	ata	aca	2634
His	Gln	Met	Ser	Met	Asp	Asp	Ser	Glu	Asn	Asn	Phe	Gln	Asn	Ile	Thr	
			795					800					805			
gaa	gag	atc	ccc	atg	gaa	gtg	ttt	aaa	gaa	gta	cgg	att	ttg	gat	agt	2682
Glu	Glu	Ile	Pro	Met	Glu	Val	Phe	Lys	Glu	Val	Arg	Ile	Leu	Asp	Ser	
		810					815					820				
aat	gaa	gga	aag	aat	gag	atg	gag	ata	caa	atg	aaa	tca	aaa	aag	ctt	2730
Asn	Glu	Gly	Lys	Asn	Glu	Met	Glu	Ile	Gln	Met	Lys	Ser	Lys	Lys	Leu	
	825					830					835					
cca	att	acg	cga	aag	ttt	tat	gcc	ttt	tat	cat	gca	cca	att	gta	aaa	2778
Pro	Ile	Thr	Arg	Lys	Phe	Tyr	Ala	Phe	Tyr	His	Ala	Pro	Ile	Val	Lys	
840					845				850						855	
ttc	tgg	ttt	aac	acg	ttg	gca	tat	tta	gga	ttt	ctg	atg	ctt	tat	aca	2826
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Ile	Val	Ile	Ala	Tyr	Ile	Phe	Thr	Tyr	Ala	Ile	Glu	Lys	Val	Arg	Glu	
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Ile	Phe	Met	Ser	Glu	Ala	Gly	Lys	Val	Asn	Gln	Lys	Ile	Lys	Val	Trp	
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Phe	Ser	Asp	Tyr	Phe	Asn	Ile	Ser	Asp	Thr	Ile	Ala	Ile	Ile	Ser	Phe	
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Phe	Ile	Gly	Phe	Gly	Leu	Arg	Phe	Gly	Ala	Lys	Trp	Asn	Phe	Ala	Asn	
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Ala	Tyr	Asp	Asn	His	Val	Phe	Val	Ala	Gly	Arg	Leu	Ile	Tyr	Cys	Leu	
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Asn	Ile	Ile	Phe	Trp	Tyr	Val	Arg	Leu	Leu	Asp	Phe	Leu	Ala	Val	Asn	
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Gln Gln Ala Gly Pro Tyr Val Met Met Ile Gly Lys Met Val Ala Asn	
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Met Phe Tyr Ile Val Val Ile Met Ala Leu Val Leu Leu Ser Phe Gly	
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Val Pro Arg Lys Ala Ile Leu Tyr Pro His Glu Ala Pro Ser Trp Thr	
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Val Tyr Ala Tyr Glu Ile Asp Val Cys Ala Asn Asp Ser Val Ile Pro	
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Gln Ile Cys Gly Pro Gly Thr Trp Leu Thr Pro Phe Leu Gln Ala Val	
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Tyr Leu Phe Val Gln Tyr Ile Ile Met Val Asn Leu Leu Ile Ala Phe	
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Phe Asn Asn Val Tyr Leu Gln Val Lys Ala Ile Ser Asn Ile Val Trp	
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Lys Tyr Gln Arg Tyr His Phe Ile Met Ala Tyr His Glu Lys Pro Val	
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Leu Pro Pro Pro Leu Ile Ile Leu Ser His Ile Val Ser Leu Phe Cys	
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Cys Ile Cys Lys Arg Arg Lys Lys Asp Lys Thr Ser Asp Gly Pro Lys	
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Leu Phe Leu Thr Glu Glu Asp Gln Lys Lys Leu His Asp Phe Glu Glu	
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Gln Cys Val Glu Met Tyr Phe Asn Glu Lys Asp Asp Lys Phe His Ser	
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Gly Ser Glu Glu Arg Ile Arg Val Thr Phe Glu Arg Val Glu Gln Met	
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Cys Ile Gln Ile Lys Glu Val Gly Asp Arg Val Asn Tyr Ile Lys Arg	
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Gly Gly Gly Leu Arg Arg Ala Val Lys Val Gln Cys Thr Trp Ser Glu	
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His Asp Ile Leu Lys Ser Gly His Leu Tyr Ile Ile Lys Ser Phe Leu	
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Pro Glu Val Val Asn Thr Trp Ser Ser Ile Tyr Lys Glu Asp Thr Val	
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Pro Arg Phe Leu Glu Val Phe Leu Leu Tyr Cys His Ser Ala Gly Gln	
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Trp Phe Ala Val Glu Glu Cys Met Thr Gly Glu Phe Arg Lys Tyr Asn	
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Val Lys Leu Gly Asp His Phe Asn Gln Ala Ile Glu Glu Trp Ser Val  
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Glu Lys His Thr Glu Gln Ser Pro Thr Asp Ala Tyr Gly Val Ile Asn  
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Phe Gln Gly Gly Ser His Ser Tyr Arg Ala Lys Tyr Val Arg Leu Ser  
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Pro	Ala	Ile	Leu	Leu	Leu	Glu	Tyr	Lys	Thr	Lys	Ala	Glu	Met	Ser	His		
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Ile	Pro	Gln	Ser	Gln	Asp	Ala	His	Gln	Met	Ser	Met	Asp	Asp	Ser	Glu		
785					790					795					800		
Asn	Asn	Phe	Gln	Asn	Ile	Thr	Glu	Glu	Ile	Pro	Met	Glu	Val	Phe	Lys		
				805					810					815			
Glu	Val	Arg	Ile	Leu	Asp	Ser	Asn	Glu	Gly	Lys	Asn	Glu	Met	Glu	Ile		
			820					825					830				
Gln	Met	Lys	Ser	Lys	Lys	Leu	Pro	Ile	Thr	Arg	Lys	Phe	Tyr	Ala	Phe		
		835					840					845					
Tyr	His	Ala	Pro	Ile	Val	Lys	Phe	Trp	Phe	Asn	Thr	Leu	Ala	Tyr	Leu		
		850				855					860						
Gly	Phe	Leu	Met	Leu	Tyr	Thr	Phe	Val	Val	Leu	Val	Gln	Met	Glu	Gln		
865					870					875					880		
Leu	Pro	Ser	Val	Gln	Glu	Trp	Ile	Val	Ile	Ala	Tyr	Ile	Phe	Thr	Tyr		
				885				890						895			
Ala	Ile	Glu	Lys	Val	Arg	Glu	Ile	Phe	Met	Ser	Glu	Ala	Gly	Lys	Val		



1395	1400	1405
Pro Ser Cys Lys Ser His Leu Glu Thr Gly Thr Lys Asp Gln Glu Thr		
1410	1415	1420
Val Cys Ser Lys Ala Thr Glu Gly Asp Asn Thr Glu Phe Gly Ala Phe		
1425	1430	1435
Val Gly His Arg Asp Ser Met Asp Leu Gln Arg Phe Lys Glu Thr Ser		
1445	1450	1455
Asn Lys Ile Lys Ile Leu Ser Glu Gln Gln Asn Asp Val Arg Asn Val		
1460	1465	1470
Ile Met Glu Tyr Thr Glu Met Pro Lys Tyr Glu Asn Asn Asn Thr Ser		
1475	1480	1485
Glu Asn Thr Leu Lys Arg Val Ser Ser Leu Ala Gly Phe Thr Asp Cys		
1490	1495	1500
His Arg Thr Ser Ile Pro Val His Ser Lys Gln Ala Glu Lys Ile Ser		
1505	1510	1515
Arg Arg Pro Ser Thr Glu Asp Thr His Glu Val Asp Ser Lys Ala Ala		
1525	1530	1535
Leu Ile Pro Asp Trp Leu Gln Asp Arg Pro Ser Asn Arg Glu Met Pro		
1540	1545	1550
Ser Glu Glu Gly Thr Leu Asn Gly Leu Thr Ser Pro Phe Lys Pro Ala		
1555	1560	1565
Met Asp Thr Asn Tyr Tyr Tyr Ser Ala Val Glu Arg Asn Asn Leu Met		
1570	1575	1580
Arg Leu Ser Gln Ser Ile Pro Phe Thr Pro Val Pro Pro Arg Gly Glu		
1585	1590	1595
Pro Val Thr Val Tyr Arg Leu Glu Glu Ser Ser Pro Asn Ile Leu Asn		
1605	1610	1615
Asn Ser Met Ser Ser Trp Ser Gln Leu Gly Leu Cys Ala Lys Ile Glu		
1620	1625	1630
Phe Leu Ser Lys Glu Glu Met Gly Gly Gly Leu Arg Arg Ala Val Lys		
1635	1640	1645
Val Gln Cys Thr Trp Ser Glu His Asp Ile Leu Lys Ser Gly His Leu		
1650	1655	1660
Tyr Ile Ile Lys Ser Phe Leu Pro Glu Val Val Asn Thr Trp Ser Ser		
1665	1670	1675
Ile Tyr Lys Glu Asp Thr Val Leu His Leu Cys Leu Arg Glu Ile Gln		
1685	1690	1695
Gln Gln Arg Ala Ala Gln Lys Leu Thr Phe Ala Phe Asn Gln Met Lys		
1700	1705	1710
Pro Lys Ser Ile Pro Tyr Ser Pro Arg Phe Leu Glu Val Phe Leu Leu		
1715	1720	1725
Tyr Cys His Ser Ala Gly Gln Trp Phe Ala Val Glu Glu Cys Met Thr		
1730	1735	1740
Gly Glu Phe Arg Lys Tyr Asn Asn Asn Asn Gly Asp Glu Ile Ile Pro		
1745	1750	1755
Thr Asn Thr Leu Glu Ile Met Leu Ala Phe Ser His Trp Thr Tyr		
1765	1770	1775
Glu Tyr Thr Arg Gly Glu Leu Leu Val Leu Asp Leu Gln Gly Val Gly		
1780	1785	1790
Glu Asn Leu Thr Asp Pro Ser Val Ile Lys Ala Glu Glu Lys Arg Ser		
1795	1800	1805
Cys Asp Met Val Phe Gly Pro Ala Asn Leu Gly Glu Asp Ala Ile Lys		
1810	1815	1820
Asn Phe Arg Ala Lys His His Cys Asn Ser Cys Cys Arg Lys Leu Lys		
1825	1830	1835
Leu Pro Asp Leu Lys Arg Asn Asp Tyr Thr Pro Asp Lys Ile Ile Phe		
1845	1850	1855
Pro Gln Asp Glu Pro Ser Asp Leu Asn Leu Gln Pro Gly Asn Ser Thr		
1860	1865	1870
Lys Glu Ser Glu Ser Thr Asn Ser Val Arg Leu Met Leu		
1875	1880	1885



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 ccctgagag atg gtt ggt gcc atg tgg aag gtg att gtt tcg ctg gtc ctg 111  
           Met Val Gly Ala Met Trp Lys Val Ile Val Ser Leu Val Leu  
           1                  5                  10

ttg atg cct ggc ccc tgt gat ggg ctg ttt cac tcc cta tac aga agt 159  
 Leu Met Pro Gly Pro Cys Asp Gly Leu Phe His Ser Leu Tyr Arg Ser  
   15                  20                  25                  30

gtt tcc atg cca cct aag gga gac tca gga cag cca tta ttt ctc acc 207  
 Val Ser Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr  
                   35                  40                  45

cct tac att gaa gct ggg aag atc caa aaa gga aga gaa ttg agt ttg 255  
 Pro Tyr Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu  
           50                  55                  60

gtc ggc cct ttc cca gga ctg aac atg aag agt tat gcc ggc ttc ctc 303  
 Val Gly Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu  
           65                  70                  75

acc gtg aat aag act tac aac agc aac ctc ttc ttc tgg ttc ttc cca 351  
 Thr Val Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro  
           80                  85                  90

gct cag ata cag cca gaa gat gcc cca gta gtt ctc tgg cta cag ggt 399  
 Ala Gln Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly  
   95                  100                  105                  110

ggg ccg gga ggt tca tcc atg ttt gga ctc ttt gtg gaa cat ggg cct 447  
 Gly Pro Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro  
           115                  120                  125

tat gtt gtc aca agt aac atg acc ttg cgt gac aga gac ttc ccc tgg 495  
 Tyr Val Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp  
           130                  135                  140

acc aca acg ctc tcc atg ctt tac att gac aat cca gtg ggc aca ggc 543  
 Thr Thr Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly  
           145                  150                  155

ttc agt ttt act gat gat acc cac gga tat gca gtc aat gag gac gat 591  
 Phe Ser Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp  
   160                  165                  170

gta gca cgg gat tta tac agt gca cta att cag ttt ttc cag ata ttt 639  
 Val Ala Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe  
   175                  180                  185                  190

cct gaa tat aaa aat aat gac ttt tat gtc act ggg gag tct tat gca 687  
 Pro Glu Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala

195										200					205					
ggg	aaa	tat	gtg	cca	gcc	att	gca	cac	ctc	atc	cat	tcc	ctc	aac	cct	735				
Gly	Lys	Tyr	Val	Pro	Ala	Ile	Ala	His	Leu	Ile	His	Ser	Leu	Asn	Pro					
			210				215						220							
gtg	aga	gag	gtg	aag	atc	aac	ctg	aac	gga	att	gct	att	gga	gat	gga	783				
Val	Arg	Glu	Val	Lys	Ile	Asn	Leu	Asn	Gly	Ile	Ala	Ile	Gly	Asp	Gly					
			225				230						235							
tat	tct	gat	ccc	gaa	tca	att	ata	ggg	ggc	tat	gca	gaa	ttc	ctg	tac	831				
Tyr	Ser	Asp	Pro	Glu	Ser	Ile	Ile	Gly	Gly	Tyr	Ala	Glu	Phe	Leu	Tyr					
			240				245						250							
caa	att	ggc	ttg	ttg	gat	gag	aag	caa	aaa	aag	tac	ttc	cag	aag	cag	879				
Gln	Ile	Gly	Leu	Leu	Asp	Glu	Lys	Gln	Lys	Lys	Tyr	Phe	Gln	Lys	Gln					
			255				260						265							
tgc	cat	gaa	tgc	ata	gaa	cac	atc	agg	aag	cag	aac	tgg	ctt	gag	gcc	927				
Cys	His	Glu	Cys	Ile	Glu	His	Ile	Arg	Lys	Gln	Asn	Trp	Leu	Glu	Ala					
			275				280						285							
ttt	gaa	ata	ctg	gat	aaa	cta	cta	gat	ggc	gac	tta	aca	agt	gat	cct	975				
Phe	Glu	Ile	Leu	Asp	Lys	Leu	Leu	Asp	Gly	Asp	Leu	Thr	Ser	Asp	Pro					
			290				295						300							
tct	tac	ttc	cag	aat	gtt	aca	gga	tgt	agt	aat	tac	tat	aac	ttt	ttg	1023				
Ser	Tyr	Phe	Gln	Asn	Val	Thr	Gly	Cys	Ser	Asn	Tyr	Tyr	Asn	Phe	Leu					
			305				310						315							
cgg	tgc	acg	gaa	cct	gag	gat	cag	ctt	tac	tat	gtg	aaa	ttt	ttg	tca	1071				
Arg	Cys	Thr	Glu	Pro	Glu	Asp	Gln	Leu	Tyr	Tyr	Val	Lys	Phe	Leu	Ser					
			320				325						330							
ctc	cca	gag	gtg	aga	caa	gcc	atc	cac	gtg	ggg	aat	cag	act	ttt	aat	1119				
Leu	Pro	Glu	Val	Arg	Gln	Ala	Ile	His	Val	Gly	Asn	Gln	Thr	Phe	Asn					
			335				340						345							
gat	gga	act	ata	gtt	gaa	aag	tac	ttg	cga	gaa	gat	aca	gta	cag	tca	1167				
Asp	Gly	Thr	Ile	Val	Glu	Lys	Tyr	Leu	Arg	Glu	Asp	Thr	Val	Gln	Ser					
			355				360						365							
gtt	aag	cca	tgg	tta	act	gaa	atc	atg	aat	aat	tat	aag	gtt	ctg	atc	1215				
Val	Lys	Pro	Trp	Leu	Thr	Glu	Ile	Met	Asn	Asn	Tyr	Lys	Val	Leu	Ile					
			370				375						380							
tac	aat	ggc	caa	ctg	gac	atc	atc	gtg	gca	gct	gcc	ctg	aca	gag	cac	1263				
Tyr	Asn	Gly	Gln	Leu	Asp	Ile	Ile	Val	Ala	Ala	Ala	Leu	Thr	Glu	His					
			385				390						395							
tcc	ttg	atg	ggc	atg	gac	tgg	aaa	gga	tcc	cag	gaa	tac	aag	aag	gca	1311				
Ser	Leu	Met	Gly	Met	Asp	Trp	Lys	Gly	Ser	Gln	Glu	Tyr	Lys	Lys	Ala					
			400				405						410							
gaa	aaa	aaa	gtt	tgg	aag	atc	ctt	aaa	tct	gac	agt	gaa	gtg	gct	ggg	1359				
Glu	Lys	Lys	Val	Trp	Lys	Ile	Leu	Lys	Ser	Asp	Ser	Glu	Val	Ala	Gly					
			415				420						425							
tac	atc	cgg	caa	gag	ggg	gac	tcc	cat	cag	gta	att	att	cga	ggg	gga	1407				
Tyr	Ile	Arg	Gln	Ala	Gly	Asp	Ser	His	Gln	Val	Ile	Ile	Arg	Gly	Gly					
			435				440						445							

gga cat att tta ccc tat gac cag cct ctg aga gct ttt gac atg att 1455  
 Gly His Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile  
                   450                                  455                                  460

aat cga ttc att tat gga aaa gga tgg gat cct tat gtt gga taa 1500  
 Asn Arg Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly \*  
                   465                                  470                                  475

actaccttcc cgaaagagaa catcagaggt tttcattgct gaaaagaaaa tcgtaaaaaac 1560  
 agaaaatgtc ataggaataa aaaaattatc ttttcatatc tgcaagattt ttttcatcaa 1620  
 taaaaattat ccttgaaa 1638

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                   20                                  25                                  30  
 Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr Pro Tyr  
                   35                                  40                                  45  
 Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu Val Gly  
                   50                                  55                                  60  
 Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu Thr Val  
   65                  70                                  75                                  80  
 Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro Ala Gln  
                   85                                  90                                  95  
 Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly Gly Pro  
                   100                                  105                                  110  
 Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro Tyr Val  
                   115                                  120                                  125  
 Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp Thr Thr  
                   130                                  135                                  140  
 Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly Phe Ser  
   145                  150                                  155                                  160  
 Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp Val Ala  
                   165                                  170                                  175  
 Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe Pro Glu  
                   180                                  185                                  190  
 Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala Gly Lys  
                   195                                  200                                  205  
 Tyr Val Pro Ala Ile Ala His Leu Ile His Ser Leu Asn Pro Val Arg  
                   210                                  215                                  220  
 Glu Val Lys Ile Asn Leu Asn Gly Ile Ala Ile Gly Asp Gly Tyr Ser  
   225                  230                                  235                                  240  
 Asp Pro Glu Ser Ile Ile Gly Gly Tyr Ala Glu Phe Leu Tyr Gln Ile  
                   245                                  250                                  255  
 Gly Leu Leu Asp Glu Lys Gln Lys Lys Tyr Phe Gln Lys Gln Cys His  
                   260                                  265                                  270  
 Glu Cys Ile Glu His Ile Arg Lys Gln Asn Trp Leu Glu Ala Phe Glu  
                   275                                  280                                  285  
 Ile Leu Asp Lys Leu Leu Asp Gly Asp Leu Thr Ser Asp Pro Ser Tyr  
                   290                                  295                                  300  
 Phe Gln Asn Val Thr Gly Cys Ser Asn Tyr Tyr Asn Phe Leu Arg Cys  
   305                  310                                  315                                  320  
 Thr Glu Pro Glu Asp Gln Leu Tyr Tyr Val Lys Phe Leu Ser Leu Pro  
                   325                                  330                                  335  
 Glu Val Arg Gln Ala Ile His Val Gly Asn Gln Thr Phe Asn Asp Gly  
                   340                                  345                                  350

Thr	Ile	Val	Glu	Lys	Tyr	Leu	Arg	Glu	Asp	Thr	Val	Gln	Ser	Val	Lys
		355					360					365			
Pro	Trp	Leu	Thr	Glu	Ile	Met	Asn	Asn	Tyr	Lys	Val	Leu	Ile	Tyr	Asn
	370					375					380				
Gly	Gln	Leu	Asp	Ile	Ile	Val	Ala	Ala	Ala	Leu	Thr	Glu	His	Ser	Leu
385					390					395					400
Met	Gly	Met	Asp	Trp	Lys	Gly	Ser	Gln	Glu	Tyr	Lys	Lys	Ala	Glu	Lys
			405						410					415	
Lys	Val	Trp	Lys	Ile	Leu	Lys	Ser	Asp	Ser	Glu	Val	Ala	Gly	Tyr	Ile
		420						425					430		
Arg	Gln	Ala	Gly	Asp	Ser	His	Gln	Val	Ile	Ile	Arg	Gly	Gly	Gly	His
		435					440					445			
Ile	Leu	Pro	Tyr	Asp	Gln	Pro	Leu	Arg	Ala	Phe	Asp	Met	Ile	Asn	Arg
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Phe	Ile	Tyr	Gly	Lys	Gly	Trp	Asp	Pro	Tyr	Val	Gly				
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<211> 2015

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (169)...(1686)

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aagctgc	gag	gatccggg	gct	gcccgcg	aga	cgaggagc	gg	gcgccagg	atg	ggg	tcg	177
										Met	Gly	Ser
												1

atg	aag	tcc	aag	ttc	ctc	cag	gtc	gga	ggc	aat	aca	ttc	tca	aaa	act	225
Met	Lys	Ser	Lys	Phe	Leu	Gln	Val	Gly	Gly	Asn	Thr	Phe	Ser	Lys	Thr	
	5					10					15					

gaa	acc	agc	gcc	agc	cca	cac	tgt	cct	gtg	tac	gtg	ccg	gat	ccc	aca	273
Glu	Thr	Ser	Ala	Ser	Pro	His	Cys	Pro	Val	Tyr	Val	Pro	Asp	Pro	Thr	
	20				25				30						35	

tcc	acc	atc	aag	ccg	ggg	cct	aat	agc	cac	aac	agc	aac	aca	cca	gga	321
Ser	Thr	Ile	Lys	Pro	Gly	Pro	Asn	Ser	His	Asn	Ser	Asn	Thr	Pro	Gly	
			40					45						50		

atc	agg	gag	gca	ggc	tct	gag	gac	atc	atc	gtg	gtt	gcc	ctg	tat	gat	369
Ile	Arg	Glu	Ala	Gly	Ser	Glu	Asp	Ile	Ile	Val	Val	Ala	Leu	Tyr	Asp	
			55				60						65			

tac	gag	gcc	att	cac	cac	gaa	gac	ctc	agc	ttc	cag	aag	ggg	gac	cag	417
Tyr	Glu	Ala	Ile	His	His	Glu	Asp	Leu	Ser	Phe	Gln	Lys	Gly	Asp	Gln	
		70					75					80				

atg	gtg	gtc	cta	gag	gaa	tcc	ggg	gag	tgg	tgg	aag	gct	cga	tcc	ctg	465
Met	Val	Val	Leu	Glu	Glu	Ser	Gly	Glu	Trp	Trp	Lys	Ala	Arg	Ser	Leu	
	85					90					95					

gcc	acc	cgg	aag	gag	ggc	tac	atc	cca	agc	aac	tat	gtc	gcc	cgc	gtt	513
Ala	Thr	Arg	Lys	Glu	Gly	Tyr	Ile	Pro	Ser	Asn	Tyr	Val	Ala	Arg	Val	
100					105					110					115	

gac tct ctg gag aca gag gag tgg ttt ttc aag ggc atc agc cgg aag	561
Asp Ser Leu Glu Thr Glu Glu Trp Phe Phe Lys Gly Ile Ser Arg Lys	
120 125 130	
gac gca gag cgc caa ctg ctg gct ccc ggc aac atg ctg ggc tcc ttc	609
Asp Ala Glu Arg Gln Leu Leu Ala Pro Gly Asn Met Leu Gly Ser Phe	
135 140 145	
atg atc cgg gat agc gag acc act aaa gga agc tac tct ttg tcc gtg	657
Met Ile Arg Asp Ser Glu Thr Thr Lys Gly Ser Tyr Ser Leu Ser Val	
150 155 160	
cga gac tac gac cct cgg cag gga gat acc gtg aaa cat tac aag atc	705
Arg Asp Tyr Asp Pro Arg Gln Gly Asp Thr Val Lys His Tyr Lys Ile	
165 170 175	
cgg acc ctg gac aac ggg ggc ttc tac ata tcc ccc cga agc acc ttc	753
Arg Thr Leu Asp Asn Gly Gly Phe Tyr Ile Ser Pro Arg Ser Thr Phe	
180 185 190 195	
agc act ctg cag gag ctg gtg gac cac tac aag aag ggg aac gac ggg	801
Ser Thr Leu Gln Glu Leu Val Asp His Tyr Lys Lys Gly Asn Asp Gly	
200 205 210	
ctc tgc cag aaa ctg tgc gtg ccc tgc atg tct tcc aag ccc cag aag	849
Leu Cys Gln Lys Leu Ser Val Pro Cys Met Ser Ser Lys Pro Gln Lys	
215 220 225	
cct tgg gag aaa gat gcc tgg gag atc cct cgg gaa tcc ctc aag ctg	897
Pro Trp Glu Lys Asp Ala Trp Glu Ile Pro Arg Glu Ser Leu Lys Leu	
230 235 240	
gag aag aaa ctt gga gct ggg cag ttt ggg gaa gtc tgg atg gcc acc	945
Glu Lys Lys Leu Gly Ala Gly Gln Phe Gly Glu Val Trp Met Ala Thr	
245 250 255	
tac aac aag cac acc aag gtg gca gtg aag acg atg aag cca ggg agc	993
Tyr Asn Lys His Thr Lys Val Ala Val Lys Thr Met Lys Pro Gly Ser	
260 265 270 275	
atg tgc gtg gag gcc ttc ctg gca gag gcc aac gtg atg aaa act ctg	1041
Met Ser Val Glu Ala Phe Leu Ala Glu Ala Asn Val Met Lys Thr Leu	
280 285 290	
cag cat gac aag ctg gtc aaa ctt cat gcg gtg gtc acc aag gag ccc	1089
Gln His Asp Lys Leu Val Lys Leu His Ala Val Val Thr Lys Glu Pro	
295 300 305	
atc tac atc atc acg gag ttc atg gcc aaa gga agc ttg ctg gac ttt	1137
Ile Tyr Ile Ile Thr Glu Phe Met Ala Lys Gly Ser Leu Leu Asp Phe	
310 315 320	
ctg aaa agt gat gag ggc agc aag cag cca ttg cca aaa ctc att gac	1185
Leu Lys Ser Asp Glu Gly Ser Lys Gln Pro Leu Pro Lys Leu Ile Asp	
325 330 335	
ttc tca gcc cag att gca gaa ggc atg gcc ttc atc gag cag agg aac	1233
Phe Ser Ala Gln Ile Ala Glu Gly Met Ala Phe Ile Glu Gln Arg Asn	
340 345 350 355	
tac atc cac cga gac ctc cga gct gcc aac atc ttg gtc tct gca tcc	1281
Tyr Ile His Arg Asp Leu Arg Ala Ala Asn Ile Leu Val Ser Ala Ser	

360										365					370					
ctg	gtg	tgt	aag	att	gct	gac	ttt	ggc	ctg	gcc	cgg	gtc	att	gag	gac	1329				
Leu	Val	Cys	Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ala	Arg	Val	Ile	Glu	Asp					
			375				380						385							
aac	gag	tac	acg	gct	cgg	gaa	ggg	gcc	aag	ttc	ccc	atc	aag	tgg	aca	1377				
Asn	Glu	Tyr	Thr	Ala	Arg	Glu	Gly	Ala	Lys	Phe	Pro	Ile	Lys	Trp	Thr					
			390				395						400							
gct	cct	gaa	gcc	atc	aac	ttt	ggc	tcc	ttc	acc	atc	aag	tca	gac	gtc	1425				
Ala	Pro	Glu	Ala	Ile	Asn	Phe	Gly	Ser	Phe	Thr	Ile	Lys	Ser	Asp	Val					
			405				410						415							
tgg	tcc	ttt	ggg	atc	ctg	ctg	atg	gag	atc	gtc	acc	tac	ggc	cgg	atc	1473				
Trp	Ser	Phe	Gly	Ile	Leu	Leu	Met	Glu	Ile	Val	Thr	Tyr	Gly	Arg	Ile					
			420				425						430							
cct	tac	cca	ggg	atg	tca	aac	cct	gaa	gtg	atc	cga	gct	ctg	gag	cgt	1521				
Pro	Tyr	Pro	Gly	Met	Ser	Asn	Pro	Glu	Val	Ile	Arg	Ala	Leu	Glu	Arg					
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Gln	Tyr	Gln	Gln	Gln	Pro	*														
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Asn Ser Ser Cys Ser Leu Gly Lys Glu Thr Lys Lys Glu Asn Met Phe
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Leu Gln Ser Ser Met Leu Thr Cys Ile Phe Leu Leu Ile Ser Gly Ser
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Cys Glu Leu Cys Ala Glu Glu Asn Phe Ser Arg Ser Tyr Pro Cys Asp
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His Gln Asn Gly Asn Pro Gly Ile Gln Ser Asn Gly Leu Asn Ile Thr
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Ser	Ala	Ile	Pro	His	Val	Lys	Tyr	Leu	Asp	Leu	Thr	Asn	Asn	Arg	Leu
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Asp	Phe	Asp	Asn	Ala	Ser	Ala	Leu	Thr	Glu	Leu	Ser	Asp	Leu	Glu	Val
			565						570					575	
Leu	Asp	Leu	Ser	Tyr	Asn	Ser	His	Tyr	Phe	Arg	Ile	Ala	Gly	Val	Thr
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His	His	Leu	Glu	Phe	Ile	Gln	Asn	Phe	Thr	Asn	Leu	Lys	Val	Leu	Asn
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Ser	Lys	Ser	Leu	Val	Glu	Leu	Val	Phe	Ser	Gly	Asn	Arg	Leu	Asp	Ile
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Leu	Trp	Asn	Asp	Asp	Asp	Asn	Arg	Tyr	Ile	Ser	Ile	Phe	Lys	Gly	Leu
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Lys	Asn	Leu	Thr	Arg	Leu	Asp	Leu	Ser	Leu	Asn	Arg	Leu	Lys	His	Ile
			660					665					670		
Pro	Asn	Glu	Ala	Phe	Leu	Asn	Leu	Pro	Ala	Ser	Leu	Thr	Glu	Leu	His
		675					680						685		
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	690					695					700				
Phe	Pro	Arg	Leu	Glu	Leu	Leu	Asp	Leu	Arg	Gly	Asn	Lys	Leu	Leu	Phe
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Leu	Thr	Asp	Ser	Leu	Ser	Asp	Phe	Thr	Ser	Ser	Leu	Arg	Thr	Leu	Leu
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Val	Ser	Ser	Leu	Lys	His	Leu	Asp	Leu	Ser	Ser	Asn	Leu	Leu	Lys	Thr		
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Leu	Glu	Leu	His	Gly	Asn	Pro	Phe	Glu	Cys	Thr	Cys	Asp	Ile	Gly	Asp		
785					790					795					800		
Phe	Arg	Arg	Trp	Met	Asp	Glu	His	Leu	Asn	Val	Lys	Ile	Pro	Arg	Leu		
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Val	Asp	Val	Ile	Cys	Ala	Ser	Pro	Gly	Asp	Gln	Arg	Gly	Lys	Ser	Ile		
			820						825					830			
Val	Ser	Leu	Glu	Leu	Thr	Thr	Cys	Val	Ser	Asp	Val	Thr	Ala	Val	Ile		
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Leu	Phe	Phe	Phe	Thr	Phe	Phe	Ile	Thr	Thr	Met	Val	Met	Leu	Ala	Ala		
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Leu	Ala	His	His	Leu	Phe	Tyr	Trp	Asp	Val	Trp	Phe	Ile	Tyr	Asn	Val		
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Cys	Leu	Ala	Lys	Ile	Lys	Gly	Tyr	Arg	Ser	Leu	Ser	Thr	Ser	Gln	Thr		
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Phe	Tyr	Asp	Ala	Tyr	Ile	Ser	Tyr	Asp	Thr	Lys	Asp	Ala	Ser	Val	Thr		
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Lys	Asn	Val	Leu	Leu	Cys	Leu	Glu	Glu	Arg	Asp	Trp	Asp	Pro	Gly	Leu		
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Ala	Ile	Ile	Asp	Asn	Leu	Met	Gln	Ser	Ile	Asn	Gln	Ser	Lys	Lys	Thr		
945					950					955					960		
Val	Phe	Val	Leu	Thr	Lys	Lys	Tyr	Ala	Lys	Ser	Trp	Asn	Phe	Lys	Thr		
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Ala	Phe	Tyr	Leu	Ala	Leu	Gln	Arg	Leu	Met	Asp	Glu	Asn	Met	Asp	Val		
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Ile	Ile	Phe	Ile	Leu	Leu	Glu	Pro	Val	Leu	Gln	His	Ser	Gln	Tyr	Leu		
			995				1000						1005				
Arg	Leu	Arg	Gln	Arg	Ile	Cys	Lys	Ser	Ser	Ile	Leu	Gln	Trp	Pro	Asp		
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Asn	Pro	Lys	Ala	Glu	Gly	Leu	Phe	Trp	Gln	Thr	Leu	Arg	Asn	Val	Val		
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Leu	Thr	Glu	Asn	Asp	Ser	Arg	Tyr	Asn	Asn	Met	Tyr	Val	Asp	Ser	Ile		
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<211> 2085

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (76)...(1407)

<400> 31

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Pro Leu Val Ala Ala Leu Asp Phe Asn Tyr His Arg Gln Glu Gly Met
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Glu Ala Phe Leu Lys Thr Val Ala Gln Asn Tyr Ser Ser Val Thr His	
30 35 40	
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Leu His Ser Ile Gly Lys Ser Val Lys Gly Arg Asn Leu Trp Val Leu	
45 50 55 60	
gtt gtg ggg cgg ttt cca aag gaa cac aga att ggg att cca gag ttc	303
Val Val Gly Arg Phe Pro Lys Glu His Arg Ile Gly Ile Pro Glu Phe	
65 70 75	
aaa tac gtg gca aat atg cat gga gat gag act gtt ggg cgg gag ctg	351
Lys Tyr Val Ala Asn Met His Gly Asp Glu Thr Val Gly Arg Glu Leu	
80 85 90	
ctg ctc cat ctg att gac tat ctc gta acc agt gat ggc aaa gac cct	399
Leu Leu His Leu Ile Asp Tyr Leu Val Thr Ser Asp Gly Lys Asp Pro	
95 100 105	
gaa atc aca aat ctg atc aat agt acc cgg ata cac atc atg cct tcc	447
Glu Ile Thr Asn Leu Ile Asn Ser Thr Arg Ile His Ile Met Pro Ser	
110 115 120	
atg aac cca gat gga ttt gaa gcc gtc aaa aag cct gac tgt tac tac	495
Met Asn Pro Asp Gly Phe Glu Ala Val Lys Lys Pro Asp Cys Tyr Tyr	
125 130 135 140	
agc atc gga agg gaa aat tat aac cag tat gac ttg aat cga aat ttc	543
Ser Ile Gly Arg Glu Asn Tyr Asn Gln Tyr Asp Leu Asn Arg Asn Phe	
145 150 155	
ccc gat gct ttt gaa tat aat aat gtc tca agg cag cct gaa act gtg	591
Pro Asp Ala Phe Glu Tyr Asn Asn Val Ser Arg Gln Pro Glu Thr Val	
160 165 170	
gca gtc atg aag tgg ctg aaa aca gag acg ttt gtc ctc tct gca aac	639
Ala Val Met Lys Trp Leu Lys Thr Glu Thr Phe Val Leu Ser Ala Asn	
175 180 185	
ctc cat ggt ggt gcc ctc gtg gcc agt tac cca ttt gat aat ggt gtt	687
Leu His Gly Gly Ala Leu Val Ala Ser Tyr Pro Phe Asp Asn Gly Val	
190 195 200	
caa gca act ggg gca tta tac tcc cga agc tta acg cct gat gat gat	735
Gln Ala Thr Gly Ala Leu Tyr Ser Arg Ser Leu Thr Pro Asp Asp Asp	
205 210 215 220	
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Val Phe Gln Tyr Leu Ala His Thr Tyr Ala Ser Arg Asn Pro Asn Met	
225 230 235	
aag aaa gga gac gag tgt aaa aac aaa atg aac ttt cct aat ggt gtt	831
Lys Lys Gly Asp Glu Cys Lys Asn Lys Met Asn Phe Pro Asn Gly Val	
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aca aat gga tac tct tgg tat cca ctc caa ggt gga atg caa gat tac	879
Thr Asn Gly Tyr Ser Trp Tyr Pro Leu Gln Gly Gly Met Gln Asp Tyr	
255 260 265	
aac tac atc tgg gcc cag tgt ttt gaa att acg ttg gag ctg tca tgc	927

Asn	Tyr	Ile	Trp	Ala	Gln	Cys	Phe	Glu	Ile	Thr	Leu	Glu	Leu	Ser	Cys		
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tgt	aaa	tat	cct	cg	gag	gag	aag	ctt	cca	tcc	ttt	tgg	aat	aat	aac	975	
Cys	Lys	Tyr	Pro	Arg	Glu	Glu	Lys	Leu	Pro	Ser	Phe	Trp	Asn	Asn	Asn		
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aaa	gcc	tca	tta	att	gaa	tat	ata	aag	cag	gtg	cac	cta	gg	gta	aag	1023	
Lys	Ala	Ser	Leu	Ile	Glu	Tyr	Ile	Lys	Gln	Val	His	Leu	Gly	Val	Lys		
				305					310					315			
gg	caa	gtt	ttt	gat	cag	aat	gga	aat	cca	tta	ccc	aat	gta	att	gtg	1071	
Gly	Gln	Val	Phe	Asp	Gln	Asn	Gly	Asn	Pro	Leu	Pro	Asn	Val	Ile	Val		
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Glu	Val	Gln	Asp	Arg	Lys	His	Ile	Cys	Pro	Tyr	Arg	Thr	Asn	Lys	Tyr		
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Gly	Glu	Tyr	Tyr	Leu	Leu	Leu	Pro	Gly	Ser	Tyr	Ile	Ile	Ile	Asn	Val		
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Thr	Val	Pro	Gly	His	Asp	Pro	His	Ile	Thr	Lys	Val	Ile	Ile	Pro	Glu		
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Lys	Ser	Gln	Asn	Phe	Ser	Ala	Leu	Lys	Lys	Asp	Ile	Leu	Leu	Pro	Phe		
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caa	ggg	caa	ttg	gat	tct	atc	cca	gta	tca	aat	cct	tca	tgc	cca	atg	1311	
Gln	Gly	Gln	Leu	Asp	Ser	Ile	Pro	Val	Ser	Asn	Pro	Ser	Cys	Pro	Met		
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Ile	Pro	Leu	Tyr	Arg	Asn	Leu	Pro	Asp	His	Ser	Ala	Ala	Thr	Lys	Pro		
			415				420					425					
agt	ttg	ttc	tta	ttt	tta	gtg	agt	ctt	ttg	cac	ata	ttc	ttc	aaa	taa	1407	
Ser	Leu	Phe	Leu	Phe	Leu	Val	Ser	Leu	Leu	His	Ile	Phe	Phe	Lys	*		
	430					435					440						
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tggtggcggg	cacctgtagt	cgcagccttt	cgggaggctg	agacaggaga	atcgcttgaa	2007											
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 <212> PRT  
 <213> Homo Sapiens

<400> 32



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			20					25					30			
Lys	Thr	Val	Ala	Gln	Asn	Tyr	Ser	Ser	Val	Thr	His	Leu	His	Ser	Ile	
	35						40					45				
Gly	Lys	Ser	Val	Lys	Gly	Arg	Asn	Leu	Trp	Val	Leu	Val	Val	Gly	Arg	
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Phe	Pro	Lys	Glu	His	Arg	Ile	Gly	Ile	Pro	Glu	Phe	Lys	Tyr	Val	Ala	
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Asn	Met	His	Gly	Asp	Glu	Thr	Val	Gly	Arg	Glu	Leu	Leu	Leu	His	Leu	
				85					90					95		
Ile	Asp	Tyr	Leu	Val	Thr	Ser	Asp	Gly	Lys	Asp	Pro	Glu	Ile	Thr	Asn	
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Leu	Ile	Asn	Ser	Thr	Arg	Ile	His	Ile	Met	Pro	Ser	Met	Asn	Pro	Asp	
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Gly	Phe	Glu	Ala	Val	Lys	Lys	Pro	Asp	Cys	Tyr	Tyr	Ser	Ile	Gly	Arg	
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Glu	Asn	Tyr	Asn	Gln	Tyr	Asp	Leu	Asn	Arg	Asn	Phe	Pro	Asp	Ala	Phe	
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Glu	Tyr	Asn	Asn	Val	Ser	Arg	Gln	Pro	Glu	Thr	Val	Ala	Val	Met	Lys	
				165					170					175		
Trp	Leu	Lys	Thr	Glu	Thr	Phe	Val	Leu	Ser	Ala	Asn	Leu	His	Gly	Gly	
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Leu	Ala	His	Thr	Tyr	Ala	Ser	Arg	Asn	Pro	Asn	Met	Lys	Lys	Gly	Asp	
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Glu	Cys	Lys	Asn	Lys	Met	Asn	Phe	Pro	Asn	Gly	Val	Thr	Asn	Gly	Tyr	
				245					250					255		
Ser	Trp	Tyr	Pro	Leu	Gln	Gly	Gly	Met	Gln	Asp	Tyr	Asn	Tyr	Ile	Trp	
			260					265					270			
Ala	Gln	Cys	Phe	Glu	Ile	Thr	Leu	Glu	Leu	Ser	Cys	Cys	Lys	Tyr	Pro	
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Arg	Glu	Glu	Lys	Leu	Pro	Ser	Phe	Trp	Asn	Asn	Asn	Lys	Ala	Ser	Leu	
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Ile	Glu	Tyr	Ile	Lys	Gln	Val	His	Leu	Gly	Val	Lys	Gly	Gln	Val	Phe	
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Asp	Gln	Asn	Gly	Asn	Pro	Leu	Pro	Asn	Val	Ile	Val	Glu	Val	Gln	Asp	
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Arg	Lys	His	Ile	Cys	Pro	Tyr	Arg	Thr	Asn	Lys	Tyr	Gly	Glu	Tyr	Tyr	
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Leu	Leu	Leu	Leu	Pro	Gly	Ser	Tyr	Ile	Ile	Asn	Val	Thr	Val	Pro	Gly	
		355					360					365				
His	Asp	Pro	His	Ile	Thr	Lys	Val	Ile	Ile	Pro	Glu	Lys	Ser	Gln	Asn	
	370					375					380					
Phe	Ser	Ala	Leu	Lys	Lys	Asp	Ile	Leu	Leu	Pro	Phe	Gln	Gly	Gln	Leu	
385					390					395					400	
Asp	Ser	Ile	Pro	Val	Ser	Asn	Pro	Ser	Cys	Pro	Met	Ile	Pro	Leu	Tyr	
				405					410					415		
Arg	Asn	Leu	Pro	Asp	His	Ser	Ala	Ala	Thr	Lys	Pro	Ser	Leu	Phe	Leu	
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<211> 1408

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

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Met Ala Asn Cys

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gag ttc agc ccg gtg tcc ggg gac aaa ccc tgc tgc cgg ctc tct agg 163  
Glu Phe Ser Pro Val Ser Gly Asp Lys Pro Cys Cys Arg Leu Ser Arg  
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aga gcc caa ctc tgt ctt ggc gtc agt atc ctg gtc ctg atc ctc gtc 211  
Arg Ala Gln Leu Cys Leu Gly Val Ser Ile Leu Val Leu Ile Leu Val  
25 30 35

gtg gtg ctc gcg gtg gtc gtc ccg agg tgg cgc cag cag tgg agc ggt 259  
Val Val Leu Ala Val Val Val Pro Arg Trp Arg Gln Gln Trp Ser Gly  
40 45 50

ccg ggc acc acc aag cgc ttt ccc gag acc gtc ctg gcg cga tgc gtc 307  
Pro Gly Thr Thr Lys Arg Phe Pro Glu Thr Val Leu Ala Arg Cys Val  
55 60 65

aag tac act gaa att cat cct gag atg aga cat gta gac tgc caa agt 355  
Lys Tyr Thr Glu Ile His Pro Glu Met Arg His Val Asp Cys Gln Ser  
70 75 80

gta tgg gat gct ttc aag ggt gca ttt att tca aaa cat cct tgc aac 403  
Val Trp Asp Ala Phe Lys Gly Ala Phe Ile Ser Lys His Pro Cys Asn  
85 90 95 100

att act gaa gaa gac tat cag cca cta atg aag ttg gga act cag acc 451  
Ile Thr Glu Glu Asp Tyr Gln Pro Leu Met Lys Leu Gly Thr Gln Thr  
105 110 115

gta cct tgc aac aag att ctt ctt tgg agc aga ata aaa gat ctg gcc 499  
Val Pro Cys Asn Lys Ile Leu Leu Trp Ser Arg Ile Lys Asp Leu Ala  
120 125 130

cat cag ttc aca cag gtc cag cgg gac atg ttc acc ctg gag gac acg 547  
His Gln Phe Thr Gln Val Gln Arg Asp Met Phe Thr Leu Glu Asp Thr  
135 140 145

ctg cta ggc tac ctt gct gat gac ctc aca tgg tgt ggt gaa ttc aac 595  
Leu Leu Gly Tyr Leu Ala Asp Asp Leu Thr Trp Cys Gly Glu Phe Asn  
150 155 160

act tcc aaa ata aac tat caa tct tgc cca gac tgg aga aag gac tgc 643  
Thr Ser Lys Ile Asn Tyr Gln Ser Cys Pro Asp Trp Arg Lys Asp Cys  
165 170 175 180

agc aac aac cct gtt tca gta ttc tgg aaa acg gtt tcc cgc agg ttt 691  
Ser Asn Asn Pro Val Ser Val Phe Trp Lys Thr Val Ser Arg Arg Phe  
185 190 195

gca gaa gct gcc tgt gat gtg gtc cat gtg atg ctc aat gga tcc cgc 739  
Ala Glu Ala Ala Cys Asp Val Val His Val Met Leu Asn Gly Ser Arg  
200 205 210

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Ser Lys Ile Phe Asp Lys Asn Ser Thr Phe Gly Ser Val Glu Val His
      215                      220                      225

aat ttg caa cca gag aag gtt cag aca cta gag gcc tgg gtg ata cat 835
Asn Leu Gln Pro Glu Lys Val Gln Thr Leu Glu Ala Trp Val Ile His
      230                      235                      240

ggt gga aga gaa gat tcc aga gac tta tgc cag gat ccc acc ata aaa 883
Gly Gly Arg Glu Asp Ser Arg Asp Leu Cys Gln Asp Pro Thr Ile Lys
245                      250                      255                      260

gag ctg gaa tcg att ata agc aaa agg aat att caa ttt tcc tgc aag 931
Glu Leu Glu Ser Ile Ile Ser Lys Arg Asn Ile Gln Phe Ser Cys Lys
      265                      270                      275

aat atc tac aga cct gac aag ttt ctt cag tgt gtg aaa aat cct gag 979
Asn Ile Tyr Arg Pro Asp Lys Phe Leu Gln Cys Val Lys Asn Pro Glu
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gat tca tct tgc aca tct gag atc tga gccagtcgct gtgggtgtgtt 1026
Asp Ser Ser Cys Thr Ser Glu Ile *
      295                      300

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<210> 34  
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 <212> PRT  
 <213> Homo Sapiens

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Leu Ile Leu Val Val Val Leu Ala Val Val Val Pro Arg Trp Arg Gln
      35      40      45
Gln Trp Ser Gly Pro Gly Thr Thr Lys Arg Phe Pro Glu Thr Val Leu
      50      55      60
Ala Arg Cys Val Lys Tyr Thr Glu Ile His Pro Glu Met Arg His Val
      65      70      75      80
Asp Cys Gln Ser Val Trp Asp Ala Phe Lys Gly Ala Phe Ile Ser Lys
      85      90      95
His Pro Cys Asn Ile Thr Glu Glu Asp Tyr Gln Pro Leu Met Lys Leu
      100      105      110
Gly Thr Gln Thr Val Pro Cys Asn Lys Ile Leu Leu Trp Ser Arg Ile
      115      120      125
Lys Asp Leu Ala His Gln Phe Thr Gln Val Gln Arg Asp Met Phe Thr
      130      135      140
Leu Glu Asp Thr Leu Leu Gly Tyr Leu Ala Asp Asp Leu Thr Trp Cys
      145      150      155      160
Gly Glu Phe Asn Thr Ser Lys Ile Asn Tyr Gln Ser Cys Pro Asp Trp
      165      170      175
Arg Lys Asp Cys Ser Asn Asn Pro Val Ser Val Phe Trp Lys Thr Val

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			180					185					190				
Ser	Arg	Arg	Phe	Ala	Glu	Ala	Ala	Cys	Asp	Val	Val	His	Val	Met	Leu		
		195						200					205				
Asn	Gly	Ser	Arg	Ser	Lys	Ile	Phe	Asp	Lys	Asn	Ser	Thr	Phe	Gly	Ser		
	210					215					220						
Val	Glu	Val	His	Asn	Leu	Gln	Pro	Glu	Lys	Val	Gln	Thr	Leu	Glu	Ala		
225					230					235					240		
Trp	Val	Ile	His	Gly	Gly	Arg	Glu	Asp	Ser	Arg	Asp	Leu	Cys	Gln	Asp		
				245					250					255			
Pro	Thr	Ile	Lys	Glu	Leu	Glu	Ser	Ile	Ile	Ser	Lys	Arg	Asn	Ile	Gln		
		260						265					270				
Phe	Ser	Cys	Lys	Asn	Ile	Tyr	Arg	Pro	Asp	Lys	Phe	Leu	Gln	Cys	Val		
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Lys	Asn	Pro	Glu	Asp	Ser	Ser	Cys	Thr	Ser	Glu	Ile						
	290					295					300						

<210> 35

<211> 769

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (16)...(759)

<400> 35

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Met Leu Leu Leu Pro Leu Pro Leu Leu Leu Phe Leu	
1 5 10	

ttg tgc tcc aga gct gaa gct ggg gag atc atc ggg ggc aca gaa tgc	99
Leu Cys Ser Arg Ala Glu Ala Gly Glu Ile Ile Gly Gly Thr Glu Cys	
15 20 25	

aag cca cat tcc cgc ccc tac atg gcc tac ctg gaa att gta act tcc	147
Lys Pro His Ser Arg Pro Tyr Met Ala Tyr Leu Glu Ile Val Thr Ser	
30 35 40	

aac ggt ccc tca aaa ttt tgt ggt ggt ttc ctt ata aga cgg aac ttt	195
Asn Gly Pro Ser Lys Phe Cys Gly Gly Phe Leu Ile Arg Arg Asn Phe	
45 50 55 60	

gtg ctg acg gct gct cat tgt gca gga agg tct ata aca gtc acc ctt	243
Val Leu Thr Ala Ala His Cys Ala Gly Arg Ser Ile Thr Val Thr Leu	
65 70 75	

gga gcc cat aac ata aca gag gaa gaa gac aca tgg cag aag ctt gag	291
Gly Ala His Asn Ile Thr Glu Glu Glu Asp Thr Trp Gln Lys Leu Glu	
80 85 90	

gtt ata aag caa ttc cgt cat cca aaa tat aac act tct act ctt cac	339
Val Ile Lys Gln Phe Arg His Pro Lys Tyr Asn Thr Ser Thr Leu His	
95 100 105	

cac gat atc atg tta cta aag ttg aag gag aaa gcc agc ctg acc ctg	387
His Asp Ile Met Leu Leu Lys Leu Lys Glu Lys Ala Ser Leu Thr Leu	
110 115 120	

gct gtg ggg aca ctc ccc ttc cca tca caa ttc aac ttt gtc cca cct	435
Ala Val Gly Thr Leu Pro Phe Pro Ser Gln Phe Asn Phe Val Pro Pro	
125 130 135 140	

ggg aga atg tgc cgg gtg gct ggc tgg gga aga aca ggt gtg ttg aag	483
Gly Arg Met Cys Arg Val Ala Gly Trp Gly Arg Thr Gly Val Leu Lys	
145 150 155	
ccg ggc tca gac act ctg caa gag gtg aag ctg aga ctc atg gat ccc	531
Pro Gly Ser Asp Thr Leu Gln Glu Val Lys Leu Arg Leu Met Asp Pro	
160 165 170	
cag gcc tgc agc cac ttc aga gac ttt gac cac aat ctt cag ctg tgt	579
Gln Ala Cys Ser His Phe Arg Asp Phe Asp His Asn Leu Gln Leu Cys	
175 180 185	
gtg ggc aat ccc agg aag aca aaa tct gca ttt aag gga gac tct ggg	627
Val Gly Asn Pro Arg Lys Thr Lys Ser Ala Phe Lys Gly Asp Ser Gly	
190 195 200	
ggc cct ctt ctg tgt gct ggg gtg gcc cag ggc atc gta tcc tat gga	675
Gly Pro Leu Leu Cys Ala Gly Val Ala Gln Gly Ile Val Ser Tyr Gly	
205 210 215 220	
cgg tcg gat gca aag ccc cct gct gtc ttc acc cga atc tcc cat tac	723
Arg Ser Asp Ala Lys Pro Pro Ala Val Phe Thr Arg Ile Ser His Tyr	
225 230 235	
cgg ccc tgg atc aac cag atc ctg cag gca aat taa tcctggatcc	769
Arg Pro Trp Ile Asn Gln Ile Leu Gln Ala Asn *	
240 245	

<210> 36

<211> 247

<212> PRT

<213> Homo Sapiens

<400> 36

Met Leu Leu Leu Pro Leu Pro Leu Leu Leu Phe Leu Leu Cys Ser Arg	
1 5 10 15	
Ala Glu Ala Gly Glu Ile Ile Gly Gly Thr Glu Cys Lys Pro His Ser	
20 25 30	
Arg Pro Tyr Met Ala Tyr Leu Glu Ile Val Thr Ser Asn Gly Pro Ser	
35 40 45	
Lys Phe Cys Gly Gly Phe Leu Ile Arg Arg Asn Phe Val Leu Thr Ala	
50 55 60	
Ala His Cys Ala Gly Arg Ser Ile Thr Val Thr Leu Gly Ala His Asn	
65 70 75 80	
Ile Thr Glu Glu Glu Asp Thr Trp Gln Lys Leu Glu Val Ile Lys Gln	
85 90 95	
Phe Arg His Pro Lys Tyr Asn Thr Ser Thr Leu His His Asp Ile Met	
100 105 110	
Leu Leu Lys Leu Lys Glu Lys Ala Ser Leu Thr Leu Ala Val Gly Thr	
115 120 125	
Leu Pro Phe Pro Ser Gln Phe Asn Phe Val Pro Pro Gly Arg Met Cys	
130 135 140	
Arg Val Ala Gly Trp Gly Arg Thr Gly Val Leu Lys Pro Gly Ser Asp	
145 150 155 160	
Thr Leu Gln Glu Val Lys Leu Arg Leu Met Asp Pro Gln Ala Cys Ser	
165 170 175	
His Phe Arg Asp Phe Asp His Asn Leu Gln Leu Cys Val Gly Asn Pro	
180 185 190	
Arg Lys Thr Lys Ser Ala Phe Lys Gly Asp Ser Gly Gly Pro Leu Leu	

	195		200		205										
Cys	Ala	Gly	Val	Ala	Gln	Gly	Ile	Val	Ser	Tyr	Gly	Arg	Ser	Asp	Ala
210						215					220				
Lys	Pro	Pro	Ala	Val	Phe	Thr	Arg	Ile	Ser	His	Tyr	Arg	Pro	Trp	Ile
225					230					235					240
Asn	Gln	Ile	Leu	Gln	Ala	Asn									
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<210> 37

<211> 1272

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (212)...(1072)

<400> 37

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tcagctgaac ctggatcctg tgcataggca agagctgact ctgagccctg gccagccaa 180  
gctgaccct acactagacc ctacacaccg g atg gag ctg atc ctg agt acc 232

Met Glu Leu Ile Leu Ser Thr

1

5

agc cca gct gag ctg act ctg gat cct gcg tgc cag cca aag ctg ccc 280  
Ser Pro Ala Glu Leu Thr Leu Asp Pro Ala Cys Gln Pro Lys Leu Pro  
10 15 20

ctg gat tcc aca tgc caa cca gag atg acc ttc aat cct ggt cca act 328  
Leu Asp Ser Thr Cys Gln Pro Glu Met Thr Phe Asn Pro Gly Pro Thr  
25 30 35

gag ctt acc ctg gat cct gaa cac cag cca gag gag acc cca gct cct 376  
Glu Leu Thr Leu Asp Pro Glu His Gln Pro Glu Glu Thr Pro Ala Pro  
40 45 50 55

agc ctg gct gag ttg acc ctg gag cct gtg cac cgc cga ccc gag ctc 424  
Ser Leu Ala Glu Leu Thr Leu Glu Pro Val His Arg Arg Pro Glu Leu  
60 65 70

ctg gat gct tgt gct gac ctc atc aat gat cag tgg ccc cgc agc cgc 472  
Leu Asp Ala Cys Ala Asp Leu Ile Asn Asp Gln Trp Pro Arg Ser Arg  
75 80 85

acc tcc cgc ctg cac tcc ctg ggc cag tcc tca gat gcc ttc ccc ctc 520  
Thr Ser Arg Leu His Ser Leu Gly Gln Ser Ser Asp Ala Phe Pro Leu  
90 95 100

tgc ctg atg ctg cta agc ccc cac ccc aca ctt gaa gca gca ccc gtt 568  
Cys Leu Met Leu Leu Ser Pro His Pro Thr Leu Glu Ala Ala Pro Val  
105 110 115

gtg gtg ggc cat gcc cgc ctg tca cgg gtg ctg aac cag ccc cag agc 616  
Val Val Gly His Ala Arg Leu Ser Arg Val Leu Asn Gln Pro Gln Ser  
120 125 130 135

ctc tta gtg gag aca gtg gtg gtg gcc cgg gcc ctg agg ggc cgt ggc 664  
Leu Leu Val Glu Thr Val Val Val Ala Arg Ala Leu Arg Gly Arg Gly  
140 145 150

ttt ggc cgc cgc ctc atg gag ggc ctg gag gtc ttt gct cgg gcc cgg	712
Phe Gly Arg Arg Leu Met Glu Gly Leu Glu Val Phe Ala Arg Ala Arg	
155 160 165	
ggc ttc cgc aag ctg cat ctc acc acc cat gac cag gtg cac ttc tat	760
Gly Phe Arg Lys Leu His Leu Thr Thr His Asp Gln Val His Phe Tyr	
170 175 180	
acc cac ctg ggc tac cag ctg ggt gag cct gtg cag ggc ctg gtc ttc	808
Thr His Leu Gly Tyr Gln Leu Gly Glu Pro Val Gln Gly Leu Val Phe	
185 190 195	
acc agc aga cgg ctg cct gcc acc ctg ctt aat gcc ttc ccc aca gcc	856
Thr Ser Arg Arg Leu Pro Ala Thr Leu Leu Asn Ala Phe Pro Thr Ala	
200 205 210 215	
ccc tct ccc cgg cca ccc agg aag gcc cca aac ctg act gcc caa gct	904
Pro Ser Pro Arg Pro Pro Arg Lys Ala Pro Asn Leu Thr Ala Gln Ala	
220 225 230	
gcc cca agg ggt ccc aag gga cct cca ttg cca cca ccc cct ccc cta	952
Ala Pro Arg Gly Pro Lys Gly Pro Pro Leu Pro Pro Pro Pro Pro Leu	
235 240 245	
cct gag tgc ctg acc atc tca ccc cca gtt cca tca ggg ccc cct tca	1000
Pro Glu Cys Leu Thr Ile Ser Pro Pro Val Pro Ser Gly Pro Pro Ser	
250 255 260	
aaa agc ctg ctg gag aca caa tat caa aat gtg agg ggg cgc ccc ata	1048
Lys Ser Leu Leu Glu Thr Gln Tyr Gln Asn Val Arg Gly Arg Pro Ile	
265 270 275	
ttc tgg atg gaa aaa gac atc tga ggccatccag ggcaaggaac tgtctttctg	1102
Phe Trp Met Glu Lys Asp Ile *	
280 285	
gttcaataga ctgccccgac agtctacaag cctcagccca ctgaccatac ctcagcccct	1162
agcccctggg gggcagcttt aacctgggca tgtttcctgg gtaccagtgg ggccaggagg	1222
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<210> 38

<211> 286

<212> PRT

<213> Homo Sapiens

<400> 38

Met Glu Leu Ile Leu Ser Thr Ser Pro Ala Glu Leu Thr Leu Asp Pro	
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Ala Cys Gln Pro Lys Leu Pro Leu Asp Ser Thr Cys Gln Pro Glu Met	
20 25 30	
Thr Phe Asn Pro Gly Pro Thr Glu Leu Thr Leu Asp Pro Glu His Gln	
35 40 45	
Pro Glu Glu Thr Pro Ala Pro Ser Leu Ala Glu Leu Thr Leu Glu Pro	
50 55 60	
Val His Arg Arg Pro Glu Leu Leu Asp Ala Cys Ala Asp Leu Ile Asn	
65 70 75 80	
Asp Gln Trp Pro Arg Ser Arg Thr Ser Arg Leu His Ser Leu Gly Gln	
85 90 95	
Ser Ser Asp Ala Phe Pro Leu Cys Leu Met Leu Leu Ser Pro His Pro	
100 105 110	
Thr Leu Glu Ala Ala Pro Val Val Val Gly His Ala Arg Leu Ser Arg	
115 120 125	





ttc aag act tgc aac gtg ctg gtg gct ttg gag cag caa tcc cca gat	570
Phe Lys Thr Cys Asn Val Leu Val Ala Leu Glu Gln Gln Ser Pro Asp	
105 110 115	
att gcc cag tgc gtc cat ctg gac aga aat gag gag gat gtg ggg gca	618
Ile Ala Gln Cys Val His Leu Asp Arg Asn Glu Glu Asp Val Gly Ala	
120 125 130	
gga gat cag ggt ttg atg ttc ggc tat gcc acc gac gag aca gag gag	666
Gly Asp Gln Gly Leu Met Phe Gly Tyr Ala Thr Asp Glu Thr Glu Glu	
135 140 145	
tgc atg ccc ctc acc atc atc ctt gct cac aag ctc aac gcc cgg atg	714
Cys Met Pro Leu Thr Ile Ile Leu Ala His Lys Leu Asn Ala Arg Met	
150 155 160	
gca gac ctc agg cgc tcc ggc ctc ctc ccc tgg ctg cgg cct gac tct	762
Ala Asp Leu Arg Arg Ser Gly Leu Leu Pro Trp Leu Arg Pro Asp Ser	
165 170 175 180	
aag act cag gtg aca gtt cag tac atg cag gac aat ggc gca gtc atc	810
Lys Thr Gln Val Thr Val Gln Tyr Met Gln Asp Asn Gly Ala Val Ile	
185 190 195	
cct gtg cgc atc cac acc atc gtc atc tct gtg cag cac aac gaa gac	858
Pro Val Arg Ile His Thr Ile Val Ile Ser Val Gln His Asn Glu Asp	
200 205 210	
atc acg ctg gag gag atg cgc agg gcc ctg aag gag caa gtc atc agg	906
Ile Thr Leu Glu Glu Met Arg Arg Ala Leu Lys Glu Gln Val Ile Arg	
215 220 225	
gcc gtg gtg ccg gcc aag tac ctg gac gaa gac acc gtc tac cac ctg	954
Ala Val Val Pro Ala Lys Tyr Leu Asp Glu Asp Thr Val Tyr His Leu	
230 235 240	
cag ccc agt ggg cgg ttt gtc atc gga ggt ccc cag ggg gat gcg ggt	1002
Gln Pro Ser Gly Arg Phe Val Ile Gly Gly Pro Gln Gly Asp Ala Gly	
245 250 255 260	
gtc act ggc cgt aag att att gtg gac acc tat ggc ggc tgg ggg gct	1050
Val Thr Gly Arg Lys Ile Ile Val Asp Thr Tyr Gly Gly Trp Gly Ala	
265 270 275	
cat ggt ggt ggg gcc ttc tct ggg aag gac tac acc aag gtg gac cgc	1098
His Gly Gly Gly Ala Phe Ser Gly Lys Asp Tyr Thr Lys Val Asp Arg	
280 285 290	
tca gcc gct tat gct gcc cgc tgg gtg gcc aag tct ctg gtg aaa gca	1146
Ser Ala Ala Tyr Ala Ala Arg Trp Val Ala Lys Ser Leu Val Lys Ala	
295 300 305	
ggg ctc tgc cgg aga gtg ctt gtc cag gtt tcc tat gcc att ggt gtg	1194
Gly Leu Cys Arg Arg Val Leu Val Gln Val Ser Tyr Ala Ile Gly Val	
310 315 320	
gcc gag ccg ctg tcc att tcc atc ttc acc tac gga acc tct cag aag	1242
Ala Glu Pro Leu Ser Ile Ser Ile Phe Thr Tyr Gly Thr Ser Gln Lys	
325 330 335 340	
aca gag cga gag ctg ctg gat gtg gtg cat aag aac ttc gac ctc cgg	1290

Thr	Glu	Arg	Glu	Leu	Leu	Asp	Val	Val	His	Lys	Asn	Phe	Asp	Leu	Arg	
				345					350					355		
ccg	ggc	gtc	att	gtc	agg	gat	ttg	gac	ttg	aag	aag	ccc	atc	tac	cag	1338
Pro	Gly	Val	Ile	Val	Arg	Asp	Leu	Asp	Leu	Lys	Lys	Pro	Ile	Tyr	Gln	
			360					365					370			
aag	aca	gca	tgc	tac	ggc	cat	ttc	gga	aga	agc	gag	ttc	cca	tgg	gag	1386
Lys	Thr	Ala	Cys	Tyr	Gly	His	Phe	Gly	Arg	Ser	Glu	Phe	Pro	Trp	Glu	
		375					380					385				
gtt	ccc	agg	aag	ctt	gta	ttt	tag	agccagggggg	agctgggcct	ggctctcacc						1440
Val	Pro	Arg	Lys	Leu	Val	Phe	*									
		390				395										

tggaggcacc	tggtggccat	gctcctcttc	cccagacgcc	tggtctgtga	tgccttccc	1500
caccaccaa	ccctcagggc	aaagccaggt	ccctctcatt	tagcctgtcc	tgtcatcatc	1560
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cctaagcacc	tgtaatgtgc	gagggaccca	gctaataact	gatctcgttt	tttcttctact	1980
gcaacatgat	gaggtagtac	cttttatatc	ccatttatag	atgggggaaa	gcaaagcaca	2040
gagagtctgg	ataacttcca	caggggtccca	cagccacgtg	tttagacct	gatgtataac	2100
taggagcttt	gactcaggag	cctgtgacat	acccccctcc	ccaccgttgt	ctcatgccag	2160
taacaggctc	aaacaatgac	aaagcagatt	cagaaatgag	gccatggact	ctgtcctgaa	2220
ggcctgaggt	tactggaaat	taggggatta	acccactagc	tcttgttgag	ccgtgggcaa	2280
ttgtctgaaa	agtgaagaca	gaaccacagg	gctattttgt	ttgcttcatg	tgtcccagaa	2340
gatgactgag	ggtgagttgg	cttacctggc	ccatcagggg	aggctggagt	tagggactga	2400
ccagcagctt	tagaatccca	gccccctgac	cactcagaga	catgcagaga	ttgggttttt	2460
ggacttctgg	ggtaagtggg	ctaagtccag	tccagtccca	tctgggcttc	ctggagcaga	2520
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ggcagggggc	tccatggggc	ccaggggaac	actggggact	tggcctctct	ctaggggtaca	3000
tggtgtctggg	agaggcagcc	caggaagtct	catctgggga	gcaggcagcc	agcatctggg	3060
ccttggcctg	gagcaciaaag	accctggcct	tcattttctc	tcaggtgaaa	ggaaattaag	3120
gcaacaaaag	aagcccggt	cctgggtcacc	taggaagcct	cagattcctt	cccatggagg	3180
gagggagtg	tttgcaggtg	gccaagttcc	tctaacttgg	ctcacactcg	acatgaaaat	3240
tcagaatttt	atactttccc	taccctctag	agaaataaga	tcttttttgt	cagtttgttt	3300
gtatgaaact	aaagccttta	tttgtaata	gttctgtcta	aaacaatgaa	taaaaactca	3360
aggagcaact	aaaaaaaaaa	aaaaaa				3386

<210> 40  
 <211> 395  
 <212> PRT  
 <213> Homo Sapiens

<400> 40  
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 Val Phe Met Phe Thr Ser Glu Ser Val Gly Glu Gly His Pro Asp Lys  
 20 25 30  
 Ile Cys Asp Gln Ile Ser Asp Ala Val Leu Asp Ala His Leu Lys Gln  
 35 40 45  
 Asp Pro Asn Ala Lys Val Ala Cys Glu Thr Val Cys Lys Thr Gly Met

50	55	60			
Val Leu Leu Cys Gly Glu Ile Thr Ser Met Ala Met Val Asp Tyr Gln					
65	70	75	80		
Arg Val Val Arg Asp Thr Ile Lys His Ile Gly Tyr Asp Asp Ser Ala					
	85	90	95		
Lys Gly Phe Asp Phe Lys Thr Cys Asn Val Leu Val Ala Leu Glu Gln					
	100	105	110		
Gln Ser Pro Asp Ile Ala Gln Cys Val His Leu Asp Arg Asn Glu Glu					
	115	120	125		
Asp Val Gly Ala Gly Asp Gln Gly Leu Met Phe Gly Tyr Ala Thr Asp					
	130	135	140		
Glu Thr Glu Glu Cys Met Pro Leu Thr Ile Ile Leu Ala His Lys Leu					
	145	150	155	160	
Asn Ala Arg Met Ala Asp Leu Arg Arg Ser Gly Leu Leu Pro Trp Leu					
	165	170	175	180	
Arg Pro Asp Ser Lys Thr Gln Val Thr Val Gln Tyr Met Gln Asp Asn					
	180	185	190	195	
Gly Ala Val Ile Pro Val Arg Ile His Thr Ile Val Ile Ser Val Gln					
	195	200	205	210	
His Asn Glu Asp Ile Thr Leu Glu Glu Met Arg Arg Ala Leu Lys Glu					
	210	215	220	225	
Gln Val Ile Arg Ala Val Val Pro Ala Lys Tyr Leu Asp Glu Asp Thr					
	225	230	235	240	
Val Tyr His Leu Gln Pro Ser Gly Arg Phe Val Ile Gly Gly Pro Gln					
	245	250	255	260	
Gly Asp Ala Gly Val Thr Gly Arg Lys Ile Ile Val Asp Thr Tyr Gly					
	260	265	270	275	
Gly Trp Gly Ala His Gly Gly Gly Ala Phe Ser Gly Lys Asp Tyr Thr					
	275	280	285	290	
Lys Val Asp Arg Ser Ala Ala Tyr Ala Ala Arg Trp Val Ala Lys Ser					
	290	295	300	305	
Leu Val Lys Ala Gly Leu Cys Arg Arg Val Leu Val Gln Val Ser Tyr					
	305	310	315	320	
Ala Ile Gly Val Ala Glu Pro Leu Ser Ile Ser Ile Phe Thr Tyr Gly					
	325	330	335	340	
Thr Ser Gln Lys Thr Glu Arg Glu Leu Leu Asp Val Val His Lys Asn					
	340	345	350	355	
Phe Asp Leu Arg Pro Gly Val Ile Val Arg Asp Leu Asp Leu Lys Lys					
	355	360	365	370	
Pro Ile Tyr Gln Lys Thr Ala Cys Tyr Gly His Phe Gly Arg Ser Glu					
	370	375	380	385	
Phe Pro Trp Glu Val Pro Arg Lys Leu Val Phe					
	385	390	395		

<210> 41

<211> 4170

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (101)...(4117)

<400> 41

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gcctcccgct ccgggccctc gaaccagcgc ggacaccaca atg gac cgg gcg tcc 115
                                     Met Asp Arg Ala Ser
                                     1 5

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gag ctg ctc ttc tac gtg aac ggc cgc aag gtg ata gaa aaa aat gtc 163
Glu Leu Leu Phe Tyr Val Asn Gly Arg Lys Val Ile Glu Lys Asn Val

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10										15					20					
gat	cct	gaa	aca	atg	ctg	ttg	cct	tat	ttg	agg	aag	aag	ctt	cga	ctc	211				
Asp	Pro	Glu	Thr	Met	Leu	Leu	Pro	Tyr	Leu	Arg	Lys	Lys	Leu	Arg	Leu					
			25					30					35							
aca	gga	act	aag	tat	ggc	tgt	gga	gga	gga	ggc	tgt	ggt	gct	tgt	aca	259				
Thr	Gly	Thr	Lys	Tyr	Gly	Cys	Gly	Gly	Gly	Gly	Cys	Gly	Ala	Cys	Thr					
		40					45					50								
gtg	atg	ata	tca	cga	tac	aac	ccc	atc	acc	aag	agg	ata	agg	cat	cac	307				
Val	Met	Ile	Ser	Arg	Tyr	Asn	Pro	Ile	Thr	Lys	Arg	Ile	Arg	His	His					
	55					60					65									
cca	gcc	aat	gcc	tgt	ctg	att	ccc	atc	tgt	tct	ctg	tat	ggt	gct	gcc	355				
Pro	Ala	Asn	Ala	Cys	Leu	Ile	Pro	Ile	Cys	Ser	Leu	Tyr	Gly	Ala	Ala					
	70				75				80						85					
gtc	acc	aca	gta	gaa	ggc	ata	gga	agc	acc	cac	acc	aga	att	cat	cct	403				
Val	Thr	Thr	Val	Glu	Gly	Ile	Gly	Ser	Thr	His	Thr	Arg	Ile	His	Pro					
				90					95					100						
gtt	cag	gag	agg	att	gcc	aag	tgt	cat	ggc	acc	cag	tgt	ggc	ttc	tgc	451				
Val	Gln	Glu	Arg	Ile	Ala	Lys	Cys	His	Gly	Thr	Gln	Cys	Gly	Phe	Cys					
			105					110					115							
aca	cct	ggg	atg	gtg	atg	tcc	atc	tac	acg	ctg	ctc	agg	aac	cac	cca	499				
Thr	Pro	Gly	Met	Val	Met	Ser	Ile	Tyr	Thr	Leu	Leu	Arg	Asn	His	Pro					
		120					125					130								
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cgt	tgc	act	gga	tac	agg	ccc	ata	att	gat	gca	tgc	aag	act	ttc	tgt	595				
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Lys	Thr	Ser	Gly	Cys	Cys	Gln	Ser	Lys	Glu	Asn	Gly	Val	Cys	Cys	Leu					
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gat	caa	gga	atc	aat	gga	ttg	cca	gaa	ttt	gag	gaa	gga	agt	aag	aca	691				
Asp	Gln	Gly	Ile	Asn	Gly	Leu	Pro	Glu	Phe	Glu	Glu	Gly	Ser	Lys	Thr					
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agt	cca	aaa	ctc	ttc	gca	gaa	gag	gag	ttt	ctg	cca	ttg	gat	cca	acc	739				
Ser	Pro	Lys	Leu	Phe	Ala	Glu	Glu	Glu	Phe	Leu	Pro	Leu	Asp	Pro	Thr					
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cag	gaa	ctg	ata	ttt	cct	cct	gag	cta	atg	ata	atg	gct	gag	aaa	cag	787				
Gln	Glu	Leu	Ile	Phe	Pro	Pro	Glu	Leu	Met	Ile	Met	Ala	Glu	Lys	Gln					
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tcg	caa	agg	acc	agg	gtg	ttt	ggc	agt	gag	aga	atg	atg	tgg	ttt	tcc	835				
Ser	Gln	Arg	Thr	Arg	Val	Phe	Gly	Ser	Glu	Arg	Met	Met	Trp	Phe	Ser					
	230				235				240					245						
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Pro	Val	Thr	Leu	Lys	Glu	Leu	Leu	Glu	Phe	Lys	Phe	Lys	Tyr	Pro	Gln					
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Ala Pro Val Ile Met Gly Asn Thr Ser Val Gly Pro Glu Val Lys Phe	
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Lys Gly Val Phe His Pro Val Ile Ile Ser Pro Asp Arg Ile Glu Glu	
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Leu Ser Val Val Asn His Ala Tyr Asn Gly Leu Thr Leu Gly Ala Gly	
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ctc agc cta gcc cag gtg aag gac att ttg gct gat gta gtc cag aag	1075
Leu Ser Leu Ala Gln Val Lys Asp Ile Leu Ala Asp Val Val Gln Lys	
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Leu Pro Glu Glu Lys Thr Gln Met Tyr His Ala Leu Leu Lys His Leu	
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Gly Thr Leu Ala Gly Ser Gln Ile Arg Asn Met Ala Ser Leu Gly Gly	
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His Ile Ile Ser Arg His Pro Asp Ser Asp Leu Asn Pro Ile Leu Ala	
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Val Gly Asn Cys Thr Leu Asn Leu Leu Ser Lys Glu Gly Lys Arg Gln	
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Ile Pro Leu Asn Glu Gln Phe Leu Ser Lys Cys Pro Asn Ala Asp Leu	
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Lys Pro Gln Glu Ile Leu Val Ser Val Asn Ile Pro Tyr Ser Arg Lys	
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Trp Glu Phe Val Ser Ala Phe Arg Gln Ala Gln Arg Gln Glu Asn Ala	
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Leu Ala Ile Val Asn Ser Gly Met Arg Val Phe Phe Gly Glu Gly Asp	
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ggc att att aga gag tta tgc atc tca tat gga ggc gtt ggt cca gcc	1507
Gly Ile Ile Arg Glu Leu Cys Ile Ser Tyr Gly Gly Val Gly Pro Ala	
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acc atc tgt gcc aag aat tcc tgc cag aaa ctc att gga agg cac tgg	1555
Thr Ile Cys Ala Lys Asn Ser Cys Gln Lys Leu Ile Gly Arg His Trp	
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Asn Glu Gln Met Leu Asp Ile Ala Cys Arg Leu Ile Leu Asn Glu Val	
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Ser Leu Leu Gly Ser Ala Pro Gly Gly Lys Val Glu Phe Lys Arg Thr	

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Leu	Ile	Ile	Ser	Phe	Leu	Phe	Lys	Phe	Tyr	Leu	Glu	Val	Ser	Gln	Ile	
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Leu	Lys	Lys	Met	Asp	Pro	Val	His	Tyr	Pro	Ser	Leu	Ala	Asp	Lys	Tyr	
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gaa	agt	gct	tta	gaa	gat	ctt	cat	tcc	aaa	cat	cac	tgc	agt	aca	tta	1795
Glu	Ser	Ala	Leu	Glu	Asp	Leu	His	Ser	Lys	His	His	Cys	Ser	Thr	Leu	
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Ile	Tyr	Cys	Asp	Asp	Met	Pro	Leu	Val	Asp	Gln	Glu	Leu	Phe	Leu	Thr	
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Phe	Val	Thr	Ser	Ser	Arg	Ala	His	Ala	Lys	Ile	Val	Ser	Ile	Asp	Leu	
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His	Leu	Ser	Asp	Val	Asn	Ser	Phe	Cys	Phe	Phe	Thr	Glu	Ala	Glu	Lys	
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Phe	Leu	Ala	Thr	Asp	Lys	Val	Phe	Cys	Val	Gly	Gln	Leu	Val	Cys	Ala	
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gtg	ctt	gcc	gat	tct	gag	gtt	cag	gca	aag	cga	gct	gct	aag	cga	gtg	2179
Val	Leu	Ala	Asp	Ser	Glu	Val	Gln	Ala	Lys	Arg	Ala	Ala	Lys	Arg	Val	
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Lys	Ile	Val	Tyr	Gln	Asp	Leu	Glu	Pro	Leu	Ile	Leu	Thr	Ile	Glu	Glu	
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Ser	Ile	Gln	His	Asn	Ser	Ser	Phe	Lys	Pro	Glu	Arg	Lys	Leu	Glu	Tyr	
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Gly	Asn	Val	Asp	Glu	Ala	Phe	Lys	Val	Val	Asp	Gln	Ile	Leu	Glu	Gly	
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gaa	ata	cat	atg	gga	ggt	caa	gaa	cat	ttt	tat	atg	gaa	acc	caa	agc	2371
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Ala Phe Gly Gly Lys Val Leu Lys Thr Gly Ile Ile Ala Ala Val Thr	
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gca ttt gcc gca aac aaa cat ggc cgt gca gtt cgc tgt gtt ctg gaa	2611
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Arg Gly Glu Asp Met Leu Ile Thr Gly Gly Arg His Pro Tyr Leu Gly	
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Lys Tyr Lys Ala Gly Phe Met Asn Asp Gly Arg Ile Leu Ala Leu Asp	
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Met Glu His Tyr Ser Asn Ala Gly Ala Ser Leu Asp Glu Ser Leu Phe	
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Val Ile Glu Met Gly Leu Leu Lys Met Asp Asn Ala Tyr Lys Phe Pro	
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Asn Leu Arg Cys Arg Gly Trp Ala Cys Arg Thr Asn Leu Pro Ser Asn	
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Gln Glu Ile Asn Ala Lys Asn Leu Ile Gln Cys Trp Arg Glu Cys Met	
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Ala Glu Asn Tyr Trp Lys Lys Lys Gly Leu Ala Met Val Pro Leu Lys	

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			755					760					765				
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His	Pro	Tyr	Leu	Gly	Lys	Tyr	Lys	Ala	Gly	Phe	Met	Asn	Asp	Gly	Arg		
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Gln	Thr	Pro	Tyr	Lys	Gln	Glu	Ile	Asn	Ala	Lys	Asn	Leu	Ile	Gln	Cys		
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Trp	Arg	Glu	Cys	Met	Ala	Met	Ser	Ser	Tyr	Ser	Leu	Arg	Lys	Val	Ala		
Val	Glu	Lys	Phe	Asn	Ala	Glu	Asn	Tyr	Trp	Lys	Lys	Lys	Gly	Leu	Ala		
Met	Val	Pro	Leu	Lys	Phe	Pro	Val	Gly	Leu	Gly	Ser	Arg	Ala	Ala	Gly		
Gln	Ala	Ala	Ala	Leu	Val	His	Ile	Tyr	Leu	Asp	Gly	Ser	Val	Leu	Val		
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Thr	His	Gly	Gly	Ile	Glu	Met	Gly	Gln	Gly	Val	His	Thr	Lys	Met	Ile		
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Gln	Val	Val	Ser	Arg	Glu	Leu	Arg	Met	Pro	Met	Ser	Asn	Val	His	Leu		
Arg	Gly	Thr	Ser	Thr	Glu	Thr	Val	Pro	Asn	Ala	Asn	Ile	Ser	Gly	Gly		
Ser	Val	Val	Ala	Asp	Leu	Asn	Gly	Leu	Ala	Val	Lys	Asp	Ala	Cys	Gln		
Thr	Leu	Leu	Lys	Arg	Leu	Glu	Pro	Ile	Ile	Ser	Lys	Asn	Pro	Lys	Gly		
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Thr	Trp	Lys	Asp	Trp	Ala	Gln	Thr	Ala	Phe	Asp	Glu	Ser	Ile	Asn	Leu		
Ser	Ala	Val	Gly	Tyr	Phe	Arg	Gly	Tyr	Glu	Ser	Asp	Met	Asn	Trp	Glu		
Lys	Gly	Glu	Gly	Gln	Pro	Phe	Glu	Tyr	Phe	Val	Tyr	Gly	Ala	Ala	Cys		
Ser	Glu	Val	Glu	Ile	Asp	Cys	Leu	Thr	Gly	Asp	His	Lys	Asn	Ile	Arg		
Thr	Asp	Ile	Val	Met	Asp	Val	Gly	Cys	Ser	Ile	Asn	Pro	Ala	Ile	Asp		
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Ile	Gly	Gln	Ile	Glu	Gly	Ala	Phe	Ile	Gln	Gly	Met	Gly	Leu	Tyr	Thr		
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Pro Asp Gln Tyr Lys Ile Pro Ala Ile Cys Asp Met Pro Thr Glu Leu  
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 His Ile Ala Leu Leu Pro Pro Ser Gln Asn Ser Asn Thr Leu Tyr Ser  
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 Ser Lys Gly Leu Gly Glu Ser Gly Val Phe Leu Gly Cys Ser Val Phe  
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 Phe Ala Ile His Asp Ala Val Ser Ala Ala Arg Gln Glu Arg Gly Leu  
 1285 1290 1295  
 His Gly Pro Leu Thr Leu Asn Ser Pro Leu Thr Pro Glu Lys Ile Arg  
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 Leu Arg Gln Leu Gln Arg Ala Ala Cys Gln Cys Pro Thr His Ser His  
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 act tac tcc caa gcc cct gga ctt tca cct tct ggg aaa aca aca gat 146  
 Thr Tyr Ser Gln Ala Pro Gly Leu Ser Pro Ser Gly Lys Thr Thr Asp  
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 tat gcc ttt gag atg gct gtt tca aat att aga tat gga gca gca gtt 194  
 Tyr Ala Phe Glu Met Ala Val Ser Asn Ile Arg Tyr Gly Ala Ala Val  
 45 50 55 60  
 aca aag gaa gta gga atg gac cta aaa aac atg ggt gct aaa aat gtg 242  
 Thr Lys Glu Val Gly Met Asp Leu Lys Asn Met Gly Ala Lys Asn Val  
 65 70 75  
 tgc ttg atg aca gac aag aac ctc tcc aag ctc cct cct gtg caa gta 290  
 Cys Leu Met Thr Asp Lys Asn Leu Ser Lys Leu Pro Pro Val Gln Val  
 80 85 90  
 gct atg gat tcc cta gtg aag aat ggc atc ccc ttt acg gtt tat gat 338  
 Ala Met Asp Ser Leu Val Lys Asn Gly Ile Pro Phe Thr Val Tyr Asp  
 95 100 105  
 aat gtg aga gtg gaa cca acg gat tca agc ttc atg gaa gct att gag 386  
 Asn Val Arg Val Glu Pro Thr Asp Ser Ser Phe Met Glu Ala Ile Glu  
 110 115 120  
 ttt gcc caa aag gga gct ttt gat gcc tat gtt gct gtc ggt ggt ggc 434  
 Phe Ala Gln Lys Gly Ala Phe Asp Ala Tyr Val Ala Val Gly Gly Gly  
 125 130 135 140

tct acc atg gac acc tgt aag gct gct aat ctg tat gca tcc agc cct	482
Ser Thr Met Asp Thr Cys Lys Ala Ala Asn Leu Tyr Ala Ser Ser Pro	
145 150 155	
cat tct gat ttc cta gat tat gtc agt gcc ccc att ggc aag gga aag	530
His Ser Asp Phe Leu Asp Tyr Val Ser Ala Pro Ile Gly Lys Gly Lys	
160 165 170	
cct gtg tct gtg cct ctt aag cct ctg att gca gtg cca act acc tca	578
Pro Val Ser Val Pro Leu Lys Pro Leu Ile Ala Val Pro Thr Thr Ser	
175 180 185	
gga acc ggg agt gaa act act ggg gtt gcc att ttt gac tat gaa cac	626
Gly Thr Gly Ser Glu Thr Thr Gly Val Ala Ile Phe Asp Tyr Glu His	
190 195 200	
ttg aaa gta aaa att ggc atc act tcg aga gcc atc aaa ccc aca ctg	674
Leu Lys Val Lys Ile Gly Ile Thr Ser Arg Ala Ile Lys Pro Thr Leu	
205 210 215 220	
gga ctg att gat cct ctg cac acc ctc cac atg cct gcc cga gtg gtc	722
Gly Leu Ile Asp Pro Leu His Thr Leu His Met Pro Ala Arg Val Val	
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gcc aac agt ggc ttt gat gtg ctt tgc cat gcc ctg gag tca tac acc	770
Ala Asn Ser Gly Phe Asp Val Leu Cys His Ala Leu Glu Ser Tyr Thr	
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acc ctg ccc tac cac ctg cgg agc ccc tgc cct tca aat ccc atc aca	818
Thr Leu Pro Tyr His Leu Arg Ser Pro Cys Pro Ser Asn Pro Ile Thr	
255 260 265	
cgg cct gcg tac cag ggc agc aac cca atc agt gac att tgg gct atc	866
Arg Pro Ala Tyr Gln Gly Ser Asn Pro Ile Ser Asp Ile Trp Ala Ile	
270 275 280	
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His Ala Leu Arg Ile Val Ala Lys Tyr Leu Lys Arg Ala Val Arg Asn	
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ccc gat gat ctt gaa gca agg tct cat atg cac ttg gca agt gct ttt	962
Pro Asp Asp Leu Glu Ala Arg Ser His Met His Leu Ala Ser Ala Phe	
305 310 315	
gct ggc atc ggc ttt gga aat gct ggt gtt cat ctg tgc cat gga atg	1010
Ala Gly Ile Gly Phe Gly Asn Ala Gly Val His Leu Cys His Gly Met	
320 325 330	
tct tac cca att tca ggt tta gtg aag atg tat aaa gca aag gat tac	1058
Ser Tyr Pro Ile Ser Gly Leu Val Lys Met Tyr Lys Ala Lys Asp Tyr	
335 340 345	
aat gtg gat cac cca ctg gtg ccc cat ggc ctt tct gtg gtg ctc acg	1106
Asn Val Asp His Pro Leu Val Pro His Gly Leu Ser Val Val Leu Thr	
350 355 360	
tcc cca gcg gtg ttc act ttc acg gcc cag atg ttt cca gag cga cac	1154
Ser Pro Ala Val Phe Thr Phe Thr Ala Gln Met Phe Pro Glu Arg His	
365 370 375 380	
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Leu Glu Met Ala Glu Ile Leu Gly Ala Asp Thr Arg Thr Ala Arg Ile	

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Gln Asp Ala Gly Leu Val Leu Ala Asp Thr Leu Arg Lys Phe Leu Phe			
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Asp Leu Asp Val Asp Asp Gly Leu Ala Ala Val Gly Tyr Ser Lys Ala			
415	420	425	
gat atc ccc gca cta gtg aaa gga acg ctg ccc cag gaa agg gtc acc			1346
Asp Ile Pro Ala Leu Val Lys Gly Thr Leu Pro Gln Glu Arg Val Thr			
430	435	440	
aag ctt gca ccc tgt ccc cag tca gaa gag gat ctg gct gct ctg ttt			1394
Lys Leu Ala Pro Cys Pro Gln Ser Glu Glu Asp Leu Ala Ala Leu Phe			
445	450	455	460
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Glu Ala Ser Met Lys Leu Tyr *			
465			

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gcataactta cctgttacca gtataggtgg gatatacatt tatcttgcag gaaattcccc	1568
aaagctcaga gtccagttcc ttccataaaa caggctggac aaatgaccac tatgttagac	1628
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tcctatgcct agtaattcac ttcatgtcta aaaattttatc tgatagaaac actagcacca	1808
gtacatacag aagcatggca aggatgtttc tggcagcact tttctaataa taaaagattt	1868
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 <212> PRT  
 <213> Homo Sapiens

<400> 44

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Gly Met Asp Leu Lys Asn Met Gly Ala Lys Asn Val Cys Leu Met Thr	
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Asp Lys Asn Leu Ser Lys Leu Pro Pro Val Gln Val Ala Met Asp Ser	
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Leu Val Lys Asn Gly Ile Pro Phe Thr Val Tyr Asp Asn Val Arg Val	
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Glu Pro Thr Asp Ser Ser Phe Met Glu Ala Ile Glu Phe Ala Gln Lys	
115 120 125	
Gly Ala Phe Asp Ala Tyr Val Ala Val Gly Gly Gly Ser Thr Met Asp	
130 135 140	
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145 150 155 160	
Leu Asp Tyr Val Ser Ala Pro Ile Gly Lys Gly Lys Pro Val Ser Val	
165 170 175	
Pro Leu Lys Pro Leu Ile Ala Val Pro Thr Thr Ser Gly Thr Gly Ser	
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Ile	Gly	Ile	Thr	Ser	Arg	Ala	Ile	Lys	Pro	Thr	Leu	Gly	Leu	Ile	Asp	
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Phe	Asp	Val	Leu	Cys	His	Ala	Leu	Glu	Ser	Tyr	Thr	Thr	Leu	Pro	Tyr	
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His	Leu	Arg	Ser	Pro	Cys	Pro	Ser	Asn	Pro	Ile	Thr	Arg	Pro	Ala	Tyr	
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Gln	Gly	Ser	Asn	Pro	Ile	Ser	Asp	Ile	Trp	Ala	Ile	His	Ala	Leu	Arg	
	275						280					285				
Ile	Val	Ala	Lys	Tyr	Leu	Lys	Arg	Ala	Val	Arg	Asn	Pro	Asp	Asp	Leu	
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Glu	Ala	Arg	Ser	His	Met	His	Leu	Ala	Ser	Ala	Phe	Ala	Gly	Ile	Gly	
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Phe	Gly	Asn	Ala	Gly	Val	His	Leu	Cys	His	Gly	Met	Ser	Tyr	Pro	Ile	
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Ser	Gly	Leu	Val	Lys	Met	Tyr	Lys	Ala	Lys	Asp	Tyr	Asn	Val	Asp	His	
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Pro	Leu	Val	Pro	His	Gly	Leu	Ser	Val	Val	Leu	Thr	Ser	Pro	Ala	Val	
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Phe	Thr	Phe	Thr	Ala	Gln	Met	Phe	Pro	Glu	Arg	His	Leu	Glu	Met	Ala	
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Glu	Ile	Leu	Gly	Ala	Asp	Thr	Arg	Thr	Ala	Arg	Ile	Gln	Asp	Ala	Gly	
385					390					395					400	
Leu	Val	Leu	Ala	Asp	Thr	Leu	Arg	Lys	Phe	Leu	Phe	Asp	Leu	Asp	Val	
			405						410					415		
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		420						425					430			
Leu	Val	Lys	Gly	Thr	Leu	Pro	Gln	Glu	Arg	Val	Thr	Lys	Leu	Ala	Pro	
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Cys	Pro	Gln	Ser	Glu	Glu	Asp	Leu	Ala	Ala	Leu	Phe	Glu	Ala	Ser	Met	
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<220>

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atgagcgagc ggcgcgtagg gcgscggcgg cggcggcggc ggcggcggcg gcggc atg 178
Met
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gag	cgc	agt	ggc	tgg	gcc	cgg	cag	act	ttc	ctc	cta	gcg	ctg	ttg	ctg	226
Glu	Arg	Ser	Gly	Trp	Ala	Arg	Gln	Thr	Phe	Leu	Leu	Ala	Leu	Leu	Leu	
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ggg	gcg	acg	ctg	agg	gcg	cgc	gcg	gcg	gct	ggc	tat	tac	ccc	cgc	ttt	274
Gly	Ala	Thr	Leu	Arg	Ala	Arg	Ala	Ala	Ala	Gly	Tyr	Tyr	Pro	Arg	Phe	
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tcg ccc ttc ttt ttc ctg tgc acc cac cac ggg gag ctg gaa ggg gat	322
Ser Pro Phe Phe Phe Leu Cys Thr His His Gly Glu Leu Glu Gly Asp	
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ggg gag cag ggc gag gtg ctc att tcc ctg cat att gcg ggc aac ccc	370
Gly Glu Gln Gly Glu Val Leu Ile Ser Leu His Ile Ala Gly Asn Pro	
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Thr Tyr Tyr Val Pro Gly Gln Glu Tyr His Val Thr Ile Ser Thr Ser	
70 75 80	
acc ttt ttt gac ggc ttg ctg gtg aca gga cta tac aca tct aca agt	466
Thr Phe Phe Asp Gly Leu Leu Val Thr Gly Leu Tyr Thr Ser Thr Ser	
85 90 95	
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Val Gln Ala Ser Gln Ser Ile Gly Gly Ser Ser Ala Phe Gly Phe Gly	
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Ile Met Ser Asp His Gln Phe Gly Asn Gln Phe Met Cys Ser Val Val	
115 120 125	
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Ala Ser His Val Ser His Leu Pro Thr Thr Asn Leu Ser Phe Ile Trp	
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Ile Ala Pro Pro Ala Gly Thr Gly Cys Val Asn Phe Met Ala Thr Ala	
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aca cac cgg ggc cag gtt att ttc aaa gat gct tta gcc cag cag ttg	706
Thr His Arg Gly Gln Val Ile Phe Lys Asp Ala Leu Ala Gln Gln Leu	
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Cys Glu Gln Gly Ala Pro Thr Asp Val Thr Val His Pro His Leu Ala	
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Glu Ile His Ser Asp Ser Ile Ile Leu Arg Asp Asp Phe Asp Ser Tyr	
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His Gln Leu Gln Leu Asn Pro Asn Ile Trp Val Glu Cys Asn Asn Cys	
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230 235 240	
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Phe Cys Glu Pro Tyr Gly Pro Arg Glu Leu Ile Thr Thr Gly Leu Asn	
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Thr Thr Thr Ala Ser Val Leu Gln Phe Ser Ile Gly Ser Gly Ser Cys	
260 265 270	
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Arg Phe Ser Tyr Ser Asp Pro Ser Ile Ile Val Leu Tyr Ala Lys Asn	



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	325 330 335		
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	340 345 350		
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	355 360 365		
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	390 395 400		
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	405 410 415		
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Gln Gly His Asn Arg Asn Val Trp Ala Val Asp Phe Phe His Val Leu	
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Ser Glu Asn Tyr Ser Gly Trp Asn Arg Ile Thr Ile Pro Leu Pro Asn	
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tgt ctc aaa ttc tgt tct ggc aga gga cag tgc act aga cat ggt tgc	2242
Cys Leu Lys Phe Cys Ser Gly Arg Gly Gln Cys Thr Arg His Gly Cys	
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Lys Cys Asp Pro Gly Phe Ser Gly Pro Ala Cys Glu Met Ala Ser Gln	
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Thr Phe Pro Met Phe Ile Ser Glu Ser Phe Gly Ser Ser Arg Leu Ser	
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Ser Tyr His Asn Phe Tyr Ser Ile Arg Gly Ala Glu Val Ser Phe Gly	
725 730 735	
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Cys Gly Val Leu Ala Ser Gly Lys Ala Leu Val Phe Asn Lys Glu Gly	
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Arg Arg Gln Leu Ile Thr Ser Phe Leu Asp Ser Ser Gln Ser Arg Phe	
755 760 765	
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tat cat gag ccc aga ata atc tcc gta gaa cta cca ggt gat gca aag	2674			
Tyr His Glu Pro Arg Ile Ile Ser Val Glu Leu Pro Gly Asp Ala Lys				
820 825 830				
cag ttt gga att cag ttc aga tgg tgg caa ccg tat cat tct tcc cag	2722			
Gln Phe Gly Ile Gln Phe Arg Trp Trp Gln Pro Tyr His Ser Ser Gln				
835 840 845				
aga gaa gat gta tgg gct att gat gag att atc atg aca tct gtg ctt	2770			
Arg Glu Asp Val Trp Ala Ile Asp Glu Ile Ile Met Thr Ser Val Leu				
850 855 860 865				
ttc aac agc att agt ctt gac ttt acc aat ctt gtg gag gtc act cag	2818			
Phe Asn Ser Ile Ser Leu Asp Phe Thr Asn Leu Val Glu Val Thr Gln				
870 875 880				
tct ctg gga ttc tac ctt gga aat gtt cag cca tac tgt ggc cac gac	2866			
Ser Leu Gly Phe Tyr Leu Gly Asn Val Gln Pro Tyr Cys Gly His Asp				
885 890 895				
tgg acc ctt tgt ttt aca gga gat tct aaa ctt gcc tca agt atg cgc	2914			
Trp Thr Leu Cys Phe Thr Gly Asp Ser Lys Leu Ala Ser Ser Met Arg				
900 905 910				
tat gtg gaa aca caa tca atg cag ata gga gca tcc tat atg att cag	2962			
Tyr Val Glu Thr Gln Ser Met Gln Ile Gly Ala Ser Tyr Met Ile Gln				
915 920 925				
ttc agt ttg gtg atg gga tgt ggc cag aaa tac acc cca cac atg gac	3010			
Phe Ser Leu Val Met Gly Cys Gly Gln Lys Tyr Thr Pro His Met Asp				
930 935 940 945				
aac cag gtg aag ctg gag tac tca acc aac cac ggc ctt acc tgg cac	3058			
Asn Gln Val Lys Leu Glu Tyr Ser Thr Asn His Gly Leu Thr Trp His				
950 955 960				
ctc gtc caa gaa gaa tgc ctt cca agt atg cca agt tgt cag gaa ttt	3106			
Leu Val Gln Glu Glu Cys Leu Pro Ser Met Pro Ser Cys Gln Glu Phe				
965 970 975				
aca tca gca agt att tac cat gcc agt gag ttt aca cag tgg agg aga	3154			
Thr Ser Ala Ser Ile Tyr His Ala Ser Glu Phe Thr Gln Trp Arg Arg				
980 985 990				
gtc ata gtg ctt ctt ccc cag aaa act tgg tcc agt gct acc cgt ttc	3202			
Val Ile Val Leu Leu Pro Gln Lys Thr Trp Ser Ser Ala Thr Arg Phe				
995 1000 1005				
cgc tgg agc cag agc tat tac aca gct caa gac gag tgg gct ttg gac	3250			
Arg Trp Ser Gln Ser Tyr Tyr Thr Ala Gln Asp Glu Trp Ala Leu Asp				
1010 1015 1020 1025				

agc att tac att ggg cag cag tgc ccc aac atg tgc agt ggg cat ggc	3298
Ser Ile Tyr Ile Gly Gln Gln Cys Pro Asn Met Cys Ser Gly His Gly	
1030 1035 1040	
tca tgc gat cat ggc ata tgc agg tgt gac cag ggg tac caa ggc act	3346
Ser Cys Asp His Gly Ile Cys Arg Cys Asp Gln Gly Tyr Gln Gly Thr	
1045 1050 1055	
gaa tgc cac cca gaa gct gcc ctt ccg tcc aca att atg tca gat ttt	3394
Glu Cys His Pro Glu Ala Ala Leu Pro Ser Thr Ile Met Ser Asp Phe	
1060 1065 1070	
gag aac cag aat ggc tgg gag tct gac tgg caa gaa gtt att ggg gga	3442
Glu Asn Gln Asn Gly Trp Glu Ser Asp Trp Gln Glu Val Ile Gly Gly	
1075 1080 1085	
gaa att gta aaa cca gaa caa ggg tgt ggt gtc atc tct tct gga tca	3490
Glu Ile Val Lys Pro Glu Gln Gly Cys Gly Val Ile Ser Ser Gly Ser	
1090 1095 1100 1105	
tct ctg tac ttc agc aag gct ggg aaa aga cag ctg gtg agt tgg gac	3538
Ser Leu Tyr Phe Ser Lys Ala Gly Lys Arg Gln Leu Val Ser Trp Asp	
1110 1115 1120	
ctg gat act tct tgg gtg gac ttt gtc cag ttc tac atc cag ata ggc	3586
Leu Asp Thr Ser Trp Val Asp Phe Val Gln Phe Tyr Ile Gln Ile Gly	
1125 1130 1135	
gga gag agt gct tca tgc aac aag cct gac agc aga gag gag ggc gtc	3634
Gly Glu Ser Ala Ser Cys Asn Lys Pro Asp Ser Arg Glu Glu Gly Val	
1140 1145 1150	
ctc ctt cag tac agc aac aat ggg ggc atc cag tgg cac ctg cta gca	3682
Leu Leu Gln Tyr Ser Asn Asn Gly Gly Ile Gln Trp His Leu Leu Ala	
1155 1160 1165	
gag atg tac ttt tca gac ttc agc aaa ccc aga ttt gtc tat ctg gag	3730
Glu Met Tyr Phe Ser Asp Phe Ser Lys Pro Arg Phe Val Tyr Leu Glu	
1170 1175 1180 1185	
ctt cca gct gct gcc aag acc cct tgc acc agg ttc cgc tgg tgg cag	3778
Leu Pro Ala Ala Ala Lys Thr Pro Cys Thr Arg Phe Arg Trp Trp Gln	
1190 1195 1200	
ccc gtg ttc tca ggg gag gac tat gac cag tgg gca gtc gat gac atc	3826
Pro Val Phe Ser Gly Glu Asp Tyr Asp Gln Trp Ala Val Asp Asp Ile	
1205 1210 1215	
atc att ctg tcc gag aag cag aag cag atc atc cca gtt atc aat cca	3874
Ile Ile Leu Ser Glu Lys Gln Lys Gln Ile Ile Pro Val Ile Asn Pro	
1220 1225 1230	
act tta cct cag aac ttt tat gag aag cca gct ttt gat tac cct atg	3922
Thr Leu Pro Gln Asn Phe Tyr Glu Lys Pro Ala Phe Asp Tyr Pro Met	
1235 1240 1245	
aat cag atg agt gtg tgg ttg atg ttg gct aat gaa gga atg gtt aaa	3970
Asn Gln Met Ser Val Trp Leu Met Leu Ala Asn Glu Gly Met Val Lys	
1250 1255 1260 1265	
aat gaa acc ttc tgt gct gcc aca cca tca gca atg ata ttt gga aaa	4018
Asn Glu Thr Phe Cys Ala Ala Thr Pro Ser Ala Met Ile Phe Gly Lys	

1270					1275					1280					
tca gat gga gat cga ttt gca gta act cga gat ttg acc ctg aaa cct	4066														
Ser Asp Gly Asp Arg Phe Ala Val Thr Arg Asp Leu Thr Leu Lys Pro															
1285 1290 1295															
gga tat gtg cta cag ttc aag cta aac ata ggt tgt gcc aat caa ttc	4114														
Gly Tyr Val Leu Gln Phe Lys Leu Asn Ile Gly Cys Ala Asn Gln Phe															
1300 1305 1310															
agc agt act gct cca gtt ctt ctt cag tac tct cat gat gct ggt atg	4162														
Ser Ser Thr Ala Pro Val Leu Gln Tyr Ser His Asp Ala Gly Met															
1315 1320 1325															
tcc tgg ttt ctg gtg aaa gaa ggc tgt tac ccg gct tct gca ggc aaa	4210														
Ser Trp Phe Leu Val Lys Glu Gly Cys Tyr Pro Ala Ser Ala Gly Lys															
1330 1335 1340 1345															
gga tgc gaa gga aac tcc aga gaa cta agt gag ccc acc atg tat cac	4258														
Gly Cys Glu Gly Asn Ser Arg Glu Leu Ser Glu Pro Thr Met Tyr His															
1350 1355 1360															
aca ggg gac ttt gaa gaa tgg aca aga atc acc att gtt att cca agg	4306														
Thr Gly Asp Phe Glu Glu Trp Thr Arg Ile Thr Ile Val Ile Pro Arg															
1365 1370 1375															
tct ctt gca tcc agc aag acc aga ttc cga tgg atc cag gag agc agc	4354														
Ser Leu Ala Ser Ser Lys Thr Arg Phe Arg Trp Ile Gln Glu Ser Ser															
1380 1385 1390															
tca cag aaa aac gtg cct cca ttt ggt tta gat gga gtg tac ata tcc	4402														
Ser Gln Lys Asn Val Pro Pro Phe Gly Leu Asp Gly Val Tyr Ile Ser															
1395 1400 1405															
gag cct tgt ccc agt tac tgc agt ggc cat ggg gac tgc att tca gga	4450														
Glu Pro Cys Pro Ser Tyr Cys Ser Gly His Gly Asp Cys Ile Ser Gly															
1410 1415 1420 1425															
gtg tgt ttc tgt gac ctg gga tat act gct gca caa gga acc tgt gtg	4498														
Val Cys Phe Cys Asp Leu Gly Tyr Thr Ala Ala Gln Gly Thr Cys Val															
1430 1435 1440															
tca aat gtc ccc aat cac aat gag atg ttc gat agg ttt gag ggg aag	4546														
Ser Asn Val Pro Asn His Asn Glu Met Phe Asp Arg Phe Glu Gly Lys															
1445 1450 1455															
ctc agc cct ctg tgg tac aag ata aca ggt gcc cag gtt gga act ggc	4594														
Leu Ser Pro Leu Trp Tyr Lys Ile Thr Gly Ala Gln Val Gly Thr Gly															
1460 1465 1470															
tgt gga aca ctt aac gat ggc aaa tct ctc tac ttc aat ggc cct ggg	4642														
Cys Gly Thr Leu Asn Asp Gly Lys Ser Leu Tyr Phe Asn Gly Pro Gly															
1475 1480 1485															
aaa agg gaa gcc cgg acg gtc cct ctg gac acc agg aat atc aga ctt	4690														
Lys Arg Glu Ala Arg Thr Val Pro Leu Asp Thr Arg Asn Ile Arg Leu															
1490 1495 1500 1505															
gtt caa ttt tat ata caa att gga agc aaa act tca ggc att acc tgc	4738														
Val Gln Phe Tyr Ile Gln Ile Gly Ser Lys Thr Ser Gly Ile Thr Cys															
1510 1515 1520															

atc aaa cca aga act aga aat gaa ggg ctt att gtt cag tat tca aat	4786
Ile Lys Pro Arg Thr Arg Asn Glu Gly Leu Ile Val Gln Tyr Ser Asn	
1525 1530 1535	
gac aat ggg ata ctc tgg cat ttg ctt cga gag ttg gac ttc atg tcc	4834
Asp Asn Gly Ile Leu Trp His Leu Leu Arg Glu Leu Asp Phe Met Ser	
1540 1545 1550	
ttc ctg gaa cca cag atc att tcc att gac ctg cca cag gac gcg aag	4882
Phe Leu Glu Pro Gln Ile Ile Ser Ile Asp Leu Pro Gln Asp Ala Lys	
1555 1560 1565	
aca cct gca acg gca ttt cga tgg tgg caa ccg caa cat ggg aag cat	4930
Thr Pro Ala Thr Ala Phe Arg Trp Trp Gln Pro Gln His Gly Lys His	
1570 1575 1580 1585	
tca gcc cag tgg gct ttg gat gat gtt ctt ata gga atg aat gac agc	4978
Ser Ala Gln Trp Ala Leu Asp Asp Val Leu Ile Gly Met Asn Asp Ser	
1590 1595 1600	
tct caa act gga ttt caa gac aaa ttt gat ggc tct ata gat ttg caa	5026
Ser Gln Thr Gly Phe Gln Asp Lys Phe Asp Gly Ser Ile Asp Leu Gln	
1605 1610 1615	
gcc aac tgg tat cga atc caa gga ggt caa gtt gat att gac tgt ctc	5074
Ala Asn Trp Tyr Arg Ile Gln Gly Gly Gln Val Asp Ile Asp Cys Leu	
1620 1625 1630	
tct atg gat act gct ctg ata ttc act gaa aac ata gga aaa cct cgt	5122
Ser Met Asp Thr Ala Leu Phe Thr Glu Asn Ile Gly Lys Pro Arg	
1635 1640 1645	
tat gct gag acc tgg gat ttt cat gtg tca gca tct acc ttt ttg cag	5170
Tyr Ala Glu Thr Trp Asp Phe His Val Ser Ala Ser Thr Phe Leu Gln	
1650 1655 1660 1665	
ttt gaa atg agc atg ggc tgt agc aag ccc ttc agc aac tcc cac agt	5218
Phe Glu Met Ser Met Gly Cys Ser Lys Pro Phe Ser Asn Ser His Ser	
1670 1675 1680	
gta cag ctc cag tat tct ctg aac aat ggc aag gac tgg cat ctt gtc	5266
Val Gln Leu Gln Tyr Ser Leu Asn Asn Gly Lys Asp Trp His Leu Val	
1685 1690 1695	
acc gaa gag tgt gtt cct cca acc att ggc tgt ctg cat tac acg gaa	5314
Thr Glu Glu Cys Val Pro Pro Thr Ile Gly Cys Leu His Tyr Thr Glu	
1700 1705 1710	
agt tca att tac acc tcg gaa aga ttc cag aat tgg aag cgg atc act	5362
Ser Ser Ile Tyr Thr Ser Glu Arg Phe Gln Asn Trp Lys Arg Ile Thr	
1715 1720 1725	
gtc tac ctt cca ctc tcc acc att tct ccc agg acc cgg ttc aga tgg	5410
Val Tyr Leu Pro Leu Ser Thr Ile Ser Pro Arg Thr Arg Phe Arg Trp	
1730 1735 1740 1745	
att cag gcc aac tac act gtg ggg gct gat tcc tgg gcg att gat aat	5458
Ile Gln Ala Asn Tyr Thr Val Gly Ala Asp Ser Trp Ala Ile Asp Asn	
1750 1755 1760	
gtt gta ctg gcc tca ggg tgc cct tgg atg tgc tca gga cga ggg att	5506
Val Val Leu Ala Ser Gly Cys Pro Trp Met Cys Ser Gly Arg Gly Ile	

1765					1770					1775					
tgt gat gct gga cgc	tgt gtg tgt gac cgg ggc	ttt ggt gga ccc tat	5554												
Cys Asp Ala Gly Arg	Cys Val Cys Asp Arg Gly Phe	Gly Gly Pro Tyr													
1780	1785	1790													
tgt gtt cct gtt gtt cct	ctg ccc tcg att ctt aaa	gac gat ttc aat	5602												
Cys Val Pro Val Val Pro	Leu Pro Ser Ile Leu Lys	Asp Asp Phe Asn													
1795	1800	1805													
ggg aat tta cat cct gac	ctt tgg cct gaa gtg tat	ggt gca gag agg	5650												
Gly Asn Leu His Pro Asp	Leu Trp Pro Glu Val Tyr	Gly Ala Glu Arg													
1810	1815	1820													
ggg aat ctg aat ggt gaa	acc atc aaa tct gga	aca tct cta att ttt	5698												
Gly Asn Leu Asn Gly Glu	Thr Ile Lys Ser Gly Thr	Ser Leu Ile Phe													
1830	1835	1840													
aaa ggg gaa gga cta agg	atg ctt att tca aga	gat cta gat tgt aca	5746												
Lys Gly Glu Gly Leu Arg	Met Leu Ile Ser Arg	Asp Leu Asp Cys Thr													
1845	1850	1855													
aat aca atg tat gtc cag	ttt tca ctt aga ttt	ata gca aaa agt acc	5794												
Asn Thr Met Tyr Val Gln	Phe Ser Leu Arg Phe	Ile Ala Lys Ser Thr													
1860	1865	1870													
cca gag aga tct cac tct	att ctg tta caa ttc	tcc atc agt gga gga	5842												
Pro Glu Arg Ser His Ser	Ile Leu Leu Gln Phe	Ser Ile Ser Gly Gly													
1875	1880	1885													
atc act tgg cac ctg atg	gat gaa ttt tac ttt	cct caa aca acg aat	5890												
Ile Thr Trp His Leu Met	Asp Glu Phe Tyr Phe	Pro Gln Thr Thr Asn													
1890	1895	1900													
ata ctt ttc atc aat gtt	ccc ttg cca tac act	gcc caa acc aat gct	5938												
Ile Leu Phe Ile Asn Val	Pro Leu Pro Tyr Thr	Ala Gln Thr Asn Ala													
1910	1915	1920													
aca aga ttc aga ctc tgg	caa cct tat aat aac	ggt aag aaa gaa gaa	5986												
Thr Arg Phe Arg Leu Trp	Gln Pro Tyr Asn Asn	Gly Lys Lys Glu Glu													
1925	1930	1935													
atc tgg att gtt gat gac	ttc att atc gat gga	aat aat gta aac aac	6034												
Ile Trp Ile Val Asp Asp	Phe Ile Ile Asp Gly	Asn Asn Val Asn Asn													
1940	1945	1950													
cct gtg atg ctc ttg gat	aca ttt gat ttt ggg	ccc aga gaa gac aat	6082												
Pro Val Met Leu Leu Asp	Thr Phe Asp Phe Gly	Pro Arg Glu Asp Asn													
1955	1960	1965													
tgg ttt ttc tat cct ggt	ggt aac atc ggt ctt	tat tgt cca tat tct	6130												
Trp Phe Phe Tyr Pro Gly	Gly Asn Ile Gly Leu	Tyr Cys Pro Tyr Ser													
1970	1975	1980													
tca aag ggg gca cct gaa	gaa gat tca gct atg	gtg ttt gtt tca aat	6178												
Ser Lys Gly Ala Pro Glu	Glu Asp Ser Ala Met	Val Phe Val Ser Asn													
1990	1995	2000													
gaa gtt ggt gag cat tcc	att acc acc cgt gac	cta aat gtg aat gag	6226												
Glu Val Gly Glu His Ser	Ile Thr Thr Arg Asp	Leu Asn Val Asn Glu													
2005	2010	2015													

aac acc atc ata caa ttt gag atc aac gtt ggc tgt tcg act gat agc Asn Thr Ile Ile Gln Phe Glu Ile Asn Val Gly Cys Ser Thr Asp Ser 2020 2025 2030	6274
tca tcc gcg gat cca gtg aga ctg gaa ttt tca agg gac ttc ggg gcg Ser Ser Ala Asp Pro Val Arg Leu Glu Phe Ser Arg Asp Phe Gly Ala 2035 2040 2045	6322
acc tgg cac ctt ctg ctg ccc ctc tgc tac cac agc agc agc cac gtc Thr Trp His Leu Leu Leu Pro Leu Cys Tyr His Ser Ser Ser His Val 2050 2055 2060 2065	6370
agc tct tta tgc tcc acc gag cac cac ccc agc agc acc tac tac gca Ser Ser Leu Cys Ser Thr Glu His His Pro Ser Ser Thr Tyr Tyr Ala 2070 2075 2080	6418
gga acc atg cag ggc tgg agg agg gag gtc gtg cac ttt ggg aag ctg Gly Thr Met Gln Gly Trp Arg Arg Glu Val Val His Phe Gly Lys Leu 2085 2090 2095	6466
cac ctt tgt gga tct gtc cgt ttc aga tgg tac cag gga ttt tac cct His Leu Cys Gly Ser Val Arg Phe Arg Trp Tyr Gln Gly Phe Tyr Pro 2100 2105 2110	6514
gcc ggc tct cag cca gtg aca tgg gcc att gat aat gtc tac atc ggt Ala Gly Ser Gln Pro Val Thr Trp Ala Ile Asp Asn Val Tyr Ile Gly 2115 2120 2125	6562
ccc cag tgt gag gag atg tgt aat gga cag ggg agc tgt atc aat gga Pro Gln Cys Glu Glu Met Cys Asn Gly Gln Gly Ser Cys Ile Asn Gly 2130 2135 2140 2145	6610
acc aaa tgt ata tgt gac cct ggc tac tca ggt cca acc tgt aaa ata Thr Lys Cys Ile Cys Asp Pro Gly Tyr Ser Gly Pro Thr Cys Lys Ile 2150 2155 2160	6658
agc acc aaa aat cct gat ttt ctc aaa gat gat ttc gaa ggt cag cta Ser Thr Lys Asn Pro Asp Phe Leu Lys Asp Asp Phe Glu Gly Gln Leu 2165 2170 2175	6706
gaa tct gat aga ttc tta tta atg agt ggt ggg aaa cca tct cga aag Glu Ser Asp Arg Phe Leu Leu Met Ser Gly Gly Lys Pro Ser Arg Lys 2180 2185 2190	6754
tgt gga atc ctt tct agt gga aac aac ctc ttt ttc aat gaa gat ggc Cys Gly Ile Leu Ser Ser Gly Asn Asn Leu Phe Phe Asn Glu Asp Gly 2195 2200 2205	6802
ttg cgc atg ttg atg aca cga gac ctg gat tta tca cat gct aga ttt Leu Arg Met Leu Met Thr Arg Asp Leu Asp Leu Ser His Ala Arg Phe 2210 2215 2220 2225	6850
gtg cag ttc ttc atg aga ctg gga tgt ggt aaa ggc gtt cct gac ccc Val Gln Phe Phe Met Arg Leu Gly Cys Gly Lys Gly Val Pro Asp Pro 2230 2235 2240	6898
agg agt caa ccc gtg ctc cta cag tat tct ctc aac ggt ggc ctc tcg Arg Ser Gln Pro Val Leu Leu Gln Tyr Ser Leu Asn Gly Gly Leu Ser 2245 2250 2255	6946
tgg agt ctt ctt cag gag ttc ctt ttc agc aat tcc agc aat gtg ggc Trp Ser Leu Leu Gln Glu Phe Leu Phe Ser Asn Ser Ser Asn Val Gly 2260 2265 2270 2275	6994



2260	2265	2270	
agg tac att gcc ctg gag ata ccc ttg aaa gcc cgt tct ggt tct act			7042
Arg Tyr Ile Ala Leu Glu Ile Pro Leu Lys Ala Arg Ser Gly Ser Thr			
2275	2280	2285	
cgc ctt cgc tgg tgg caa ccg tct gag aat ggg cac ttc tac agc ccc			7090
Arg Leu Arg Trp Trp Gln Pro Ser Glu Asn Gly His Phe Tyr Ser Pro			
2290	2295	2300	2305
tgg gtt atc gat cag att ctt att gga gga aat att tct ggt aat acg			7138
Trp Val Ile Asp Gln Ile Leu Ile Gly Gly Asn Ile Ser Gly Asn Thr			
2310	2315	2320	
gtc ttg gaa gat gat ttc aca acc ctt gat agt agg aaa tgg ctg ctt			7186
Val Leu Glu Asp Asp Phe Thr Thr Leu Asp Ser Arg Lys Trp Leu Leu			
2325	2330	2335	
cac cca gga ggc acc aag atg ccc gtg tgt ggc tct act ggt gat gcc			7234
His Pro Gly Gly Thr Lys Met Pro Val Cys Gly Ser Thr Gly Asp Ala			
2340	2345	2350	
ctg gtc ttc att gaa aag gcc agc acc cgt tac gtg gtc agc aca gac			7282
Leu Val Phe Ile Glu Lys Ala Ser Thr Arg Tyr Val Val Ser Thr Asp			
2355	2360	2365	
gtt gcc gtg aat gag gat tcc ttc cta cag ata gac ttc gct gcc tcc			7330
Val Ala Val Asn Glu Asp Ser Phe Leu Gln Ile Asp Phe Ala Ala Ser			
2370	2375	2380	2385
tgc tca gtc aca gac tct tgt tat gcg att gaa ttg gaa tac tca gta			7378
Cys Ser Val Thr Asp Ser Cys Tyr Ala Ile Glu Leu Glu Tyr Ser Val			
2390	2395	2400	
gat ctt gga ttg tca tgg cac cca ttg gta agg gac tgt ctg cct acc			7426
Asp Leu Gly Leu Ser Trp His Pro Leu Val Arg Asp Cys Leu Pro Thr			
2405	2410	2415	
aat gtg gaa tgc agt cgc tat cat ctg caa cgg atc ctg gtg tca gac			7474
Asn Val Glu Cys Ser Arg Tyr His Leu Gln Arg Ile Leu Val Ser Asp			
2420	2425	2430	
act ttc aac aag tgg act aga atc act ctg cct ctc cct cct tat acc			7522
Thr Phe Asn Lys Trp Thr Arg Ile Thr Leu Pro Leu Pro Pro Tyr Thr			
2435	2440	2445	
agg tcc caa gcc act cgt ttc cgt tgg cat caa cca gct cct ttt gac			7570
Arg Ser Gln Ala Thr Arg Phe Arg Trp His Gln Pro Ala Pro Phe Asp			
2450	2455	2460	2465
aag cag cag aca tgg gca ata gat aat gtc tat atc ggg gat ggc tgc			7618
Lys Gln Gln Thr Trp Ala Ile Asp Asn Val Tyr Ile Gly Asp Gly Cys			
2470	2475	2480	
ata gac atg tgc agt ggc cat ggg aga tgc atc cag gga aac tgc gtc			7666
Ile Asp Met Cys Ser Gly His Gly Arg Cys Ile Gln Gly Asn Cys Val			
2485	2490	2495	
tgt gat gaa cag tgg ggt ggc ctg tac tgt gat gac ccc gag acc tct			7714
Cys Asp Glu Gln Trp Gly Gly Leu Tyr Cys Asp Asp Pro Glu Thr Ser			
2500	2505	2510	

ctt cca acc caa ctc aaa gac aac ttc aat cga gct cca tcc agt cag	7762
Leu Pro Thr Gln Leu Lys Asp Asn Phe Asn Arg Ala Pro Ser Ser Gln	
2515 2520 2525	
aac tgg ctg act gtg aac gga ggg aaa ttg agt aca gtg tgt gga gcc	7810
Asn Trp Leu Thr Val Asn Gly Gly Lys Leu Ser Thr Val Cys Gly Ala	
2530 2535 2540 2545	
gtg gcg tcg gga atg gct ctc cat ttc agt ggg ggt tgt agt cga tta	7858
Val Ala Ser Gly Met Ala Leu His Phe Ser Gly Gly Cys Ser Arg Leu	
2550 2555 2560	
tta gtc act gtg gat cta aac ctc act aat gct gag ttc atc caa ttt	7906
Leu Val Thr Val Asp Leu Asn Leu Thr Asn Ala Glu Phe Ile Gln Phe	
2565 2570 2575	
tac ttc atg tat ggg tgc ctg att aca cca aac aac cgt aac caa ggt	7954
Tyr Phe Met Tyr Gly Cys Leu Ile Thr Pro Asn Asn Arg Asn Gln Gly	
2580 2585 2590	
gtt ctc ttg gaa tat tct gtc aat gga ggc att acc tgg aac ctg ctc	8002
Val Leu Leu Glu Tyr Ser Val Asn Gly Gly Ile Thr Trp Asn Leu Leu	
2595 2600 2605	
atg gag att ttc tat gac cag tac agt aag ccc gga ttt gtg aat atc	8050
Met Glu Ile Phe Tyr Asp Gln Tyr Ser Lys Pro Gly Phe Val Asn Ile	
2610 2615 2620 2625	
ctt ctc cct cct gat gct aaa gag att gcc act cgc ttc cgc tgg tgg	8098
Leu Leu Pro Pro Asp Ala Lys Glu Ile Ala Thr Arg Phe Arg Trp Trp	
2630 2635 2640	
cag cca aga cat gac ggc ctg gat cag aac gac tgg gcc att gac aat	8146
Gln Pro Arg His Asp Gly Leu Asp Gln Asn Asp Trp Ala Ile Asp Asn	
2645 2650 2655	
gtc ctc atc tca ggc tct gct gac caa agg acc gtt atg ctg gac acc	8194
Val Leu Ile Ser Gly Ser Ala Asp Gln Arg Thr Val Met Leu Asp Thr	
2660 2665 2670	
ttc agc agc gcc cca gta ccc cag cac gag cgc tcc cct gca gat gcc	8242
Phe Ser Ser Ala Pro Val Pro Gln His Glu Arg Ser Pro Ala Asp Ala	
2675 2680 2685	
ggc cct gtc ggg agg atc gcc ttt gac atg ttt atg gaa gac aaa act	8290
Gly Pro Val Gly Arg Ile Ala Phe Asp Met Phe Met Glu Asp Lys Thr	
2690 2695 2700 2705	
tca gtg aat gag cac tgg cta ttc cat gat gat tgt aca gta gaa aga	8338
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Arg Tyr Pro *				
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<211> 3460

<212> PRT

<213> Homo Sapiens

<400> 46

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Phe Ser Pro Phe Phe Phe Leu Cys Thr His His Gly Glu Leu Glu Gly
 35          40          45
Asp Gly Glu Gln Gly Glu Val Leu Ile Ser Leu His Ile Ala Gly Asn
 50          55          60
Pro Thr Tyr Tyr Val Pro Gly Gln Glu Tyr His Val Thr Ile Ser Thr
 65          70          75          80
Ser Thr Phe Phe Asp Gly Leu Leu Val Thr Gly Leu Tyr Thr Ser Thr
 85          90          95
Ser Val Gln Ala Ser Gln Ser Ile Gly Gly Ser Ser Ala Phe Gly Phe
100          105          110
Gly Ile Met Ser Asp His Gln Phe Gly Asn Gln Phe Met Cys Ser Val
115          120          125
Val Ala Ser His Val Ser His Leu Pro Thr Thr Asn Leu Ser Phe Ile
130          135          140
Trp Ile Ala Pro Pro Ala Gly Thr Gly Cys Val Asn Phe Met Ala Thr
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Ala Thr His Arg Gly Gln Val Ile Phe Lys Asp Ala Leu Ala Gln Gln
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Tyr His Gln Leu Gln Leu Asn Pro Asn Ile Trp Val Glu Cys Asn Asn
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Cys Glu Thr Gly Glu Gln Cys Gly Ala Ile Met His Gly Asn Ala Val
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Glu Val Tyr Glu Ala Cys Trp Ala Leu Asp Asn Ile Leu Ile Ile Asn
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Ser Ala His Arg Gln Val Val Leu Glu Asp Ser Leu Asp Pro Val Asp
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Pro	Glu	Leu	Gln	Thr	Pro	Ala	Thr	Lys	Phe	Cys	Leu	Arg	Gln	Lys	Asn
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Leu	Pro	Val	Leu	Pro	Ser	Thr	Met	Ser	His	Met	Ile	Gln	Phe	Ser	Ile
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 Cys Ile Lys Pro Arg Thr Arg Asn Glu Gly Leu Ile Val Gln Tyr Ser  
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 Lys Thr Pro Ala Thr Ala Phe Arg Trp Trp Gln Pro Gln His Gly Lys  
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 Ser Val Gln Leu Gln Tyr Ser Leu Asn Asn Gly Lys Asp Trp His Leu  
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 Val Thr Glu Glu Cys Val Pro Pro Thr Ile Gly Cys Leu His Tyr Thr  
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 Trp Ile Gln Ala Asn Tyr Thr Val Gly Ala Asp Ser Trp Ala Ile Asp  
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 Tyr Cys Val Pro Val Val Pro Leu Pro Ser Ile Leu Lys Asp Asp Phe  
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 Asn Gly Asn Leu His Pro Asp Leu Trp Pro Glu Val Tyr Gly Ala Glu  
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 Arg Gly Asn Leu Asn Gly Glu Thr Ile Lys Ser Gly Thr Ser Leu Ile  
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 Phe Lys Gly Glu Gly Leu Arg Met Leu Ile Ser Arg Asp Leu Asp Cys  
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Asn	Trp	Phe	Phe	Tyr	Pro	Gly	Gly	Asn	Ile	Gly	Leu	Tyr	Cys	Pro	Tyr		
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Ser	Ser	Lys	Gly	Ala	Pro	Glu	Glu	Asp	Ser	Ala	Met	Val	Phe	Val	Ser		
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Glu	Asn	Thr	Ile	Ile	Gln	Phe	Glu	Ile	Asn	Val	Gly	Cys	Ser	Thr	Asp		
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Ser	Cys	Ser	Val	Thr	Asp	Ser	Cys	Tyr	Ala	Ile	Glu	Leu	Glu	Tyr	Ser	2385	2390	2395
Val	Asp	Leu	Gly	Leu	Ser	Trp	His	Pro	Leu	Val	Arg	Asp	Cys	Leu	Pro	2405	2410	2415
Thr	Asn	Val	Glu	Cys	Ser	Arg	Tyr	His	Leu	Gln	Arg	Ile	Leu	Val	Ser	2420	2425	2430
Asp	Thr	Phe	Asn	Lys	Trp	Thr	Arg	Ile	Thr	Leu	Pro	Leu	Pro	Pro	Tyr	2435	2440	2445
Thr	Arg	Ser	Gln	Ala	Thr	Arg	Phe	Arg	Trp	His	Gln	Pro	Ala	Pro	Phe	2450	2455	2460
Asp	Lys	Gln	Gln	Thr	Trp	Ala	Ile	Asp	Asn	Val	Tyr	Ile	Gly	Asp	Gly	2465	2470	2475
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Val	Cys	Asp	Glu	Gln	Trp	Gly	Gly	Leu	Tyr	Cys	Asp	Asp	Pro	Glu	Thr	2500	2505	2510
Ser	Leu	Pro	Thr	Gln	Leu	Lys	Asp	Asn	Phe	Asn	Arg	Ala	Pro	Ser	Ser	2515	2520	2525
Gln	Asn	Trp	Leu	Thr	Val	Asn	Gly	Gly	Lys	Leu	Ser	Thr	Val	Cys	Gly	2530	2535	2540
Ala	Val	Ala	Ser	Gly	Met	Ala	Leu	His	Phe	Ser	Gly	Gly	Cys	Ser	Arg	2545	2550	2555
Leu	Leu	Val	Thr	Val	Asp	Leu	Asn	Leu	Thr	Asn	Ala	Glu	Phe	Ile	Gln	2565	2570	2575
Phe	Tyr	Phe	Met	Tyr	Gly	Cys	Leu	Ile	Thr	Pro	Asn	Asn	Arg	Asn	Gln	2580	2585	2590
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Lys Thr Lys Ile Glu Gly Leu Asp Ile His Phe Ile His Val Lys Pro	
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Arg Asp Val Glu Leu Leu Tyr Pro Val Lys Glu Lys Val Phe Tyr Ser	
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				425					430					435						
gag	ccg	gag	ctg	ctc	gcc	cag	gac	atc	cgc	aag	ttc	ctg	tcg	gtg	ctg	1518				
Glu	Pro	Glu	Leu	Leu	Ala	Gln	Asp	Ile	Arg	Lys	Phe	Leu	Ser	Val	Leu					
			440					445					450							
gag	cgg	caa	tga	cccccccctc	tccccccgcc	tgccacctcc	ccccacaagt									1570				
Glu	Arg	Gln	*																	
			455																	
gccctccagg	cttttcttgg	ggaagatacc	ccttttctga	ggaatgagtt	tgccctccgtc	1630														
ccctgccccat	gctgggagcc	cacgctcacc	ccctcacccc	tccaagctca	ctcccccaacc	1690														
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<210> 48  
 <211> 455  
 <212> PRT  
 <213> Homo Sapiens

<400> 48

Met	Trp	Leu	Glu	Ile	Leu	Leu	Thr	Ser	Val	Leu	Gly	Phe	Ala	Ile	Tyr
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Trp	Phe	Ile	Ser	Arg	Asp	Lys	Glu	Glu	Thr	Leu	Pro	Leu	Glu	Asp	Gly
			20					25					30		
Trp	Trp	Gly	Pro	Gly	Thr	Arg	Ser	Ala	Ala	Arg	Glu	Asp	Asp	Ser	Ile
		35					40					45			
Arg	Pro	Phe	Lys	Val	Glu	Thr	Ser	Asp	Glu	Glu	Ile	His	Asp	Leu	His
	50					55					60				
Gln	Arg	Ile	Asp	Lys	Phe	Arg	Phe	Thr	Pro	Pro	Leu	Glu	Asp	Ser	Cys
65				70					75					80	
Phe	His	Tyr	Gly	Phe	Asn	Ser	Asn	Tyr	Leu	Lys	Lys	Val	Ile	Ser	Tyr
			85					90					95		
Trp	Arg	Asn	Glu	Phe	Asp	Trp	Lys	Lys	Gln	Val	Glu	Ile	Leu	Asn	Arg
		100					105						110		
Tyr	Pro	His	Phe	Lys	Thr	Lys	Ile	Glu	Gly	Leu	Asp	Ile	His	Phe	Ile
		115					120					125			
His	Val	Lys	Pro	Pro	Gln	Leu	Pro	Ala	Gly	His	Thr	Pro	Lys	Pro	Leu
	130					135					140				
Leu	Met	Val	His	Gly	Trp	Pro	Gly	Ser	Phe	Tyr	Glu	Phe	Tyr	Lys	Ile
145					150				155					160	
Ile	Pro	Leu	Leu	Thr	Asp	Pro	Lys	Asn	His	Gly	Leu	Ser	Asp	Glu	His
			165					170					175		
Val	Phe	Glu	Val	Ile	Cys	Pro	Ser	Ile	Pro	Gly	Tyr	Gly	Phe	Ser	Glu
		180						185					190		
Ala	Ser	Ser	Lys	Lys	Gly	Phe	Asn	Ser	Val	Ala	Thr	Ala	Arg	Ile	Phe
		195					200					205			

Tyr	Lys	Leu	Met	Leu	Arg	Leu	Gly	Phe	Gln	Glu	Phe	Tyr	Ile	Gln	Gly
210						215					220				
Gly	Asp	Trp	Gly	Ser	Leu	Ile	Cys	Thr	Asn	Met	Ala	Gln	Leu	Val	Pro
225					230					235					240
Ser	His	Val	Lys	Gly	Leu	His	Leu	Asn	Met	Ala	Leu	Val	Leu	Ser	Asn
			245						250					255	
Phe	Ser	Thr	Leu	Thr	Leu	Leu	Leu	Gly	Gln	Arg	Phe	Gly	Arg	Phe	Leu
			260					265					270		
Gly	Leu	Thr	Glu	Arg	Asp	Val	Glu	Leu	Leu	Tyr	Pro	Val	Lys	Glu	Lys
		275					280					285			
Val	Phe	Tyr	Ser	Leu	Met	Arg	Glu	Ser	Gly	Tyr	Met	His	Ile	Gln	Cys
	290					295					300				
Thr	Lys	Pro	Asp	Thr	Val	Gly	Ser	Ala	Leu	Asn	Asp	Ser	Pro	Val	Gly
305					310					315					320
Leu	Ala	Ala	Tyr	Ile	Leu	Glu	Lys	Phe	Ser	Thr	Trp	Thr	Asn	Thr	Glu
			325						330					335	
Phe	Arg	Tyr	Leu	Glu	Asp	Gly	Gly	Leu	Glu	Arg	Lys	Phe	Ser	Leu	Asp
			340					345					350		
Asp	Leu	Leu	Thr	Asn	Val	Met	Leu	Tyr	Trp	Thr	Thr	Gly	Thr	Ile	Ile
	355						360					365			
Ser	Ser	Gln	Arg	Phe	Tyr	Lys	Glu	Asn	Leu	Gly	Gln	Gly	Trp	Met	Thr
	370					375					380				
Gln	Lys	His	Glu	Arg	Met	Lys	Val	Tyr	Val	Pro	Thr	Gly	Phe	Ser	Ala
385					390					395					400
Phe	Pro	Phe	Glu	Leu	Leu	His	Thr	Pro	Glu	Lys	Trp	Val	Arg	Phe	Lys
			405						410					415	
Tyr	Pro	Lys	Leu	Ile	Ser	Tyr	Ser	Tyr	Met	Val	Arg	Gly	Gly	His	Phe
		420						425					430		
Ala	Ala	Phe	Glu	Glu	Pro	Glu	Leu	Leu	Ala	Gln	Asp	Ile	Arg	Lys	Phe
	435						440					445			
Leu	Ser	Val	Leu	Glu	Arg	Gln									
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 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
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 aaaaaaaaaa ggaacctgaa ctttagtaac acagctggaa caatcgcagc ggcggcggca 180  
 gcggcgggag aagagggtta atttagttga tttctgtgg ttggttggtg ttcgctagtc 240  
 tcacggtg atg gaa gct gca cat ttt ttc gaa ggg acc gag aag ctg ctg 290  
 Met Glu Ala Ala His Phe Phe Glu Gly Thr Glu Lys Leu Leu  
 1 5 10  
 gag gtt tgg ttc tcc cgg cag cag ccc gac gca aac caa gga tct ggg 338  
 Glu Val Trp Phe Ser Arg Gln Gln Pro Asp Ala Asn Gln Gly Ser Gly  
 15 20 25 30  
 gat ctt cgc act atc cca aga tct gag tgg gac ata ctt ttg aag gat 386  
 Asp Leu Arg Thr Ile Pro Arg Ser Glu Trp Asp Ile Leu Leu Lys Asp  
 35 40 45  
 gtg caa tgt tca atc ata agt gtg aca aaa act gac aag cag gaa gct 434  
 Val Gln Cys Ser Ile Ile Ser Val Thr Lys Thr Asp Lys Gln Glu Ala



50					55					60						
tat	gta	ctc	agt	gag	agt	agc	atg	ttt	gtc	tcc	aag	aga	cgt	ttc	att	482
Tyr	Val	Leu	Ser	Glu	Ser	Ser	Met	Phe	Val	Ser	Lys	Arg	Arg	Phe	Ile	
		65					70					75				
ttg	aag	aca	tgt	ggc	acc	acc	ctc	ttg	ctg	aaa	gca	ctg	ggt	ccc	ctg	530
Leu	Lys	Thr	Cys	Gly	Thr	Thr	Leu	Leu	Leu	Lys	Ala	Leu	Val	Pro	Leu	
	80					85					90					
ttg	aag	ctt	gct	agg	gat	tac	agt	ggg	ttt	gac	tca	att	caa	agc	ttc	578
Leu	Lys	Leu	Ala	Arg	Asp	Tyr	Ser	Gly	Phe	Asp	Ser	Ile	Gln	Ser	Phe	
	95				100					105					110	
ttt	tat	tct	cgt	aag	aat	ttc	atg	aag	cct	tct	cac	caa	ggg	tac	cca	626
Phe	Tyr	Ser	Arg	Lys	Asn	Phe	Met	Lys	Pro	Ser	His	Gln	Gly	Tyr	Pro	
				115					120					125		
cac	cgg	aat	ttc	cag	gaa	gaa	ata	gag	ttt	ctt	aat	gca	att	ttc	cca	674
His	Arg	Asn	Phe	Gln	Glu	Glu	Ile	Glu	Phe	Leu	Asn	Ala	Ile	Phe	Pro	
			130					135					140			
aat	gga	gca	gga	tat	tgt	atg	gga	cgt	atg	aat	tct	gac	tgt	tgg	tac	722
Asn	Gly	Ala	Gly	Tyr	Cys	Met	Gly	Arg	Met	Asn	Ser	Asp	Cys	Trp	Tyr	
	145						150					155				
tta	tat	act	ctg	gat	ttc	cca	gag	agt	cgg	gta	atc	agt	cag	cca	gat	770
Leu	Tyr	Thr	Leu	Asp	Phe	Pro	Glu	Ser	Arg	Val	Ile	Ser	Gln	Pro	Asp	
	160					165					170					
caa	acc	ttg	gaa	att	ctg	atg	agt	gag	ctt	gac	cca	gca	ggt	atg	gac	818
Gln	Thr	Leu	Glu	Ile	Leu	Met	Ser	Glu	Leu	Asp	Pro	Ala	Val	Met	Asp	
	175				180					185					190	
cag	ttc	tac	atg	aaa	gat	ggc	ggt	act	gca	aag	gat	gtc	act	cgt	gag	866
Gln	Phe	Tyr	Met	Lys	Asp	Gly	Val	Thr	Ala	Lys	Asp	Val	Thr	Arg	Glu	
				195					200					205		
agt	gga	att	cgt	gac	ctg	ata	cca	ggc	tct	gtc	att	gat	gcc	aca	atg	914
Ser	Gly	Ile	Arg	Asp	Leu	Ile	Pro	Gly	Ser	Val	Ile	Asp	Ala	Thr	Met	
			210					215					220			
ttc	aat	cct	tgt	ggg	tat	tcg	atg	aat	gga	atg	aaa	tcg	gat	gga	act	962
Phe	Asn	Pro	Cys	Gly	Tyr	Ser	Met	Asn	Gly	Met	Lys	Ser	Asp	Gly	Thr	
	225						230					235				
tat	tgg	act	att	cac	atc	act	cca	gaa	cca	gaa	ttt	tct	tat	gtt	agc	1010
Tyr	Trp	Thr	Ile	His	Ile	Thr	Pro	Glu	Pro	Glu	Phe	Ser	Tyr	Val	Ser	
	240					245					250					
ttt	gaa	aca	aac	tta	agt	cag	acc	tcc	tat	gat	gac	ctg	atc	agg	aaa	1058
Phe	Glu	Thr	Asn	Leu	Ser	Gln	Thr	Ser	Tyr	Asp	Asp	Leu	Ile	Arg	Lys	
	255					260				265					270	
ggt	gta	gaa	gtc	ttc	aag	cca	gga	aaa	ttt	gtg	acc	acc	ttg	ttt	gtt	1106
Val	Val	Glu	Val	Phe	Lys	Pro	Gly	Lys	Phe	Val	Thr	Thr	Leu	Phe	Val	
				275					280					285		
aat	cag	agt	tct	aaa	tgt	cgc	aca	gtg	ctt	gct	tcg	ccc	cag	aag	att	1154
Asn	Gln	Ser	Ser	Lys	Cys	Arg	Thr	Val	Leu	Ala	Ser	Pro	Gln	Lys	Ile	
				290				295					300			

gaa ggt ttt aag cgt ctt gat tgc cag agt gct atg ttc aat gat tac 1202  
 Glu Gly Phe Lys Arg Leu Asp Cys Gln Ser Ala Met Phe Asn Asp Tyr  
           305                                  310                                  315

aat ttt gtt ttt acc agt ttt gct aag aag cag caa caa cag cag agt 1250  
 Asn Phe Val Phe Thr Ser Phe Ala Lys Lys Gln Gln Gln Gln Gln Ser  
           320                                  325                                  330

tga ttaagaaaaa tgaagaaaaa acgcaaaaag agaacacatg tagaaggtgg 1303  
 \*

tggaatgcttt ctagatgtcg atgctggggg cagtgccttc cataaccacc actgtgtagt 1363  
 tgcagaaagc cctagatgta atgatagtgt aatcattttg aattgtatgc attattatat 1423  
 caaggagtta gatattctgc atgaatgctc tcttctgtgt ttaggtattc tctgccactc 1483  
 ttgctgtgaa attgaagtgg atgtagaaaa aaccttttac tatatgaaac tttacaacac 1543  
 ttgtgaaagc aactcaattt ggtttatgca cagtgttaata tttctccaag tatcatccaa 1603  
 aattccccac agacaaggct ttcgtcctca ttaggtgttg gcctcagcct aacctcttag 1663  
 gactgttcta ttaaattgct gccagaattt tacatccagt tacctccact ttctagaaca 1723  
 tattctttac taatgttatt gaaaccaatt tctacttcat actgatgttt ttggaaacag 1783  
 caattaaagt ttttcttcca tg 1805

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 <211> 334  
 <212> PRT  
 <213> Homo Sapiens

<400> 50  
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 Trp Phe Ser Arg Gln Gln Pro Asp Ala Asn Gln Gly Ser Gly Asp Leu  
           20                                  25                                  30  
 Arg Thr Ile Pro Arg Ser Glu Trp Asp Ile Leu Leu Lys Asp Val Gln  
           35                                  40                                  45  
 Cys Ser Ile Ile Ser Val Thr Lys Thr Asp Lys Gln Glu Ala Tyr Val  
   50                                  55                                  60  
 Leu Ser Glu Ser Ser Met Phe Val Ser Lys Arg Phe Ile Leu Lys  
  65                                  70                                  75                                  80  
 Thr Cys Gly Thr Thr Leu Leu Leu Lys Ala Leu Val Pro Leu Leu Lys  
           85                                  90                                  95  
 Leu Ala Arg Asp Tyr Ser Gly Phe Asp Ser Ile Gln Ser Phe Phe Tyr  
          100                                 105                                 110  
 Ser Arg Lys Asn Phe Met Lys Pro Ser His Gln Gly Tyr Pro His Arg  
          115                                 120                                 125  
 Asn Phe Gln Glu Glu Ile Glu Phe Leu Asn Ala Ile Phe Pro Asn Gly  
  130                                 135                                 140  
 Ala Gly Tyr Cys Met Gly Arg Met Asn Ser Asp Cys Trp Tyr Leu Tyr  
 145                                 150                                 155                                 160  
 Thr Leu Asp Phe Pro Glu Ser Arg Val Ile Ser Gln Pro Asp Gln Thr  
          165                                 170                                 175  
 Leu Glu Ile Leu Met Ser Glu Leu Asp Pro Ala Val Met Asp Gln Phe  
          180                                 185                                 190  
 Tyr Met Lys Asp Gly Val Thr Ala Lys Asp Val Thr Arg Glu Ser Gly  
          195                                 200                                 205  
 Ile Arg Asp Leu Ile Pro Gly Ser Val Ile Asp Ala Thr Met Phe Asn  
  210                                 215                                 220  
 Pro Cys Gly Tyr Ser Met Asn Gly Met Lys Ser Asp Gly Thr Tyr Trp  
 225                                 230                                 235                                 240  
 Thr Ile His Ile Thr Pro Glu Pro Glu Phe Ser Tyr Val Ser Phe Glu  
          245                                 250                                 255  
 Thr Asn Leu Ser Gln Thr Ser Tyr Asp Asp Leu Ile Arg Lys Val Val  
          260                                 265                                 270

Glu	Val	Phe	Lys	Pro	Gly	Lys	Phe	Val	Thr	Thr	Leu	Phe	Val	Asn	Gln
		275					280					285			
Ser	Ser	Lys	Cys	Arg	Thr	Val	Leu	Ala	Ser	Pro	Gln	Lys	Ile	Glu	Gly
	290					295					300				
Phe	Lys	Arg	Leu	Asp	Cys	Gln	Ser	Ala	Met	Phe	Asn	Asp	Tyr	Asn	Phe
305					310					315					320
Val	Phe	Thr	Ser	Phe	Ala	Lys	Lys	Gln	Gln	Gln	Gln	Gln	Ser		
				325					330						

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<211> 3707

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (231)...(3299)

<400> 51

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ttgggaaatg	aaaaacatct	gcaatgagag	gtaattttat	tctcctcttc	cttttaccct	180
agtctcactc	tccatagtag	gacctggatc	tttgcatacag	agaaaacata	atg aac	236
					Met Asn	
					1	

aat	aac	tgg	aat	gtg	tgt	ttc	ttt	ctt	ttc	tgc	cct	agt	att	act	aga	284
Asn	Asn	Trp	Asn	Val	Cys	Phe	Phe	Leu	Phe	Cys	Pro	Ser	Ile	Thr	Arg	
		5					10					15				

aca	ttt	gca	tgc	gga	aaa	aca	gaa	aag	gtg	atc	ttt	caa	gca	ctc	aag	332
Thr	Phe	Ala	Ser	Gly	Lys	Thr	Glu	Lys	Val	Ile	Phe	Gln	Ala	Leu	Lys	
	20					25					30					

gag	tta	ggt	ctt	ccc	agt	gga	aag	aat	gat	gaa	att	gag	ccc	aca	gca	380
Glu	Leu	Gly	Leu	Pro	Ser	Gly	Lys	Asn	Asp	Glu	Ile	Glu	Pro	Thr	Ala	
	35				40					45					50	

ttt	tct	tat	gaa	aag	ttc	tat	gaa	ctg	aca	caa	aag	att	tgt	cct	cgg	428
Phe	Ser	Tyr	Glu	Lys	Phe	Tyr	Glu	Leu	Thr	Gln	Lys	Ile	Cys	Pro	Arg	
				55					60					65		

aca	gat	ata	gaa	gat	ctt	ttc	aaa	aaa	atc	aat	gga	gac	aaa	act	gat	476
Thr	Asp	Ile	Glu	Asp	Leu	Phe	Lys	Lys	Ile	Asn	Gly	Asp	Lys	Thr	Asp	
			70					75					80			

tat	tta	acg	gta	gac	caa	tta	gtg	agc	ttt	cta	aat	gaa	cat	caa	cga	524
Tyr	Leu	Thr	Val	Asp	Gln	Leu	Val	Ser	Phe	Leu	Asn	Glu	His	Gln	Arg	
		85					90					95				

gat	cct	cga	ttg	aat	gaa	att	tta	ttt	cca	ttt	tat	gat	gcc	aaa	agg	572
Asp	Pro	Arg	Leu	Asn	Glu	Ile	Leu	Phe	Pro	Phe	Tyr	Asp	Ala	Lys	Arg	
	100					105					110					

gca	atg	cag	atc	att	gag	atg	tat	gaa	cct	gat	gaa	gat	ttg	aag	aaa	620
Ala	Met	Gln	Ile	Ile	Glu	Met	Tyr	Glu	Pro	Asp	Glu	Asp	Leu	Lys	Lys	
115					120					125					130	

aaa	ggc	ctt	ata	tca	agt	gat	ggg	ttt	tgc	aga	tat	ctg	atg	tca	gat	668
Lys	Gly	Leu	Ile	Ser	Ser	Asp	Gly	Phe	Cys	Arg	Tyr	Leu	Met	Ser	Asp	
				135					140					145		

gaa aac gcc cca gtc ttc cta gat cgt tta gaa ctt tac caa gaa atg	716
Glu Asn Ala Pro Val Phe Leu Asp Arg Leu Glu Leu Tyr Gln Glu Met	
150 155 160	
gac cat cct ctg gct cac tac ttc atc agt tct tcc cat aac act tat	764
Asp His Pro Leu Ala His Tyr Phe Ile Ser Ser Ser His Asn Thr Tyr	
165 170 175	
ctc act ggc aga cag ttc ggc ggg aag tct tcg gta gaa atg tac aga	812
Leu Thr Gly Arg Gln Phe Gly Lys Ser Ser Val Glu Met Tyr Arg	
180 185 190	
cag gtt ctc ctg gct ggt tgc aga tgt gtt gaa ctt gac tgc tgg gat	860
Gln Val Leu Leu Ala Gly Cys Arg Cys Val Glu Leu Asp Cys Trp Asp	
195 200 205 210	
gga aaa ggt gag gac caa gaa cca ata ata act cat gga aaa gca atg	908
Gly Lys Gly Glu Asp Gln Glu Pro Ile Ile Thr His Gly Lys Ala Met	
215 220 225	
tgt aca gat atc ctt ttt aag gat gta att caa gcc atc aag gaa act	956
Cys Thr Asp Ile Leu Phe Lys Asp Val Ile Gln Ala Ile Lys Glu Thr	
230 235 240	
gca ttt gtc aca tca gaa tat cct gta att ctc tcc ttt gaa aat cac	1004
Ala Phe Val Thr Ser Glu Tyr Pro Val Ile Leu Ser Phe Glu Asn His	
245 250 255	
tgc agc aaa tat caa cag tac aag atg tcc aaa tat tgc gaa gat cta	1052
Cys Ser Lys Tyr Gln Gln Tyr Lys Met Ser Lys Tyr Cys Glu Asp Leu	
260 265 270	
ttt ggg gat ctc ctg ttg aaa caa gca ctt gaa tca cat cca ctg gaa	1100
Phe Gly Asp Leu Leu Leu Lys Gln Ala Leu Glu Ser His Pro Leu Glu	
275 280 285 290	
cca ggc aga cct ttg cca tcc ccc aat gac ctc aaa aga aaa ata ctc	1148
Pro Gly Arg Pro Leu Pro Ser Pro Asn Asp Leu Lys Arg Lys Ile Leu	
295 300 305	
ata aaa aac aag cgg ctg aaa cct gaa gtt gaa aaa aaa cag ctg gaa	1196
Ile Lys Asn Lys Arg Leu Lys Pro Glu Val Glu Lys Lys Gln Leu Glu	
310 315 320	
gct ttg aga agc atg atg gaa gct gga gaa tct gcc tcc cca gca aac	1244
Ala Leu Arg Ser Met Met Glu Ala Gly Glu Ser Ala Ser Pro Ala Asn	
325 330 335	
atc tta gag gac gat aat gaa gag gag atc gaa agt gct gac caa gag	1292
Ile Leu Glu Asp Asp Asn Glu Glu Glu Ile Glu Ser Ala Asp Gln Glu	
340 345 350	
gag gaa gct cac ccc gaa ttc aaa ttt gga aat gaa ctt tct gct gat	1340
Glu Glu Ala His Pro Glu Phe Lys Phe Gly Asn Glu Leu Ser Ala Asp	
355 360 365 370	
gac ttg ggt cac aag gaa gct gtt gca aat agc gtc aag aag ggc ctg	1388
Asp Leu Gly His Lys Glu Ala Val Ala Asn Ser Val Lys Lys Gly Leu	
375 380 385	
gtc act gta gaa gat gag cag gcg tgg atg gca tct tat aaa tat gta	1436

Val	Thr	Val	Glu	Asp	Glu	Gln	Ala	Trp	Met	Ala	Ser	Tyr	Lys	Tyr	Val		
			390					395					400				
ggg	gct	acc	act	aat	atc	cat	cca	tat	ttg	tcc	aca	atg	atc	aac	tat	1484	
Gly	Ala	Thr	Thr	Asn	Ile	His	Pro	Tyr	Leu	Ser	Thr	Met	Ile	Asn	Tyr		
		405					410					415					
gcc	cag	cct	gta	aag	ttt	caa	ggg	ttc	cat	gtg	gca	gaa	gaa	cgc	aat	1532	
Ala	Gln	Pro	Val	Lys	Phe	Gln	Gly	Phe	His	Val	Ala	Glu	Glu	Arg	Asn		
		420				425					430						
att	cat	tat	aac	atg	tct	tct	ttt	aat	gaa	tca	gtc	ggg	ctt	ggc	tac	1580	
Ile	His	Tyr	Asn	Met	Ser	Ser	Phe	Asn	Glu	Ser	Val	Gly	Leu	Gly	Tyr		
435					440					445					450		
ttg	aag	aca	cat	gca	att	gaa	ttt	gtc	aat	tat	aac	aaa	cgg	caa	atg	1628	
Leu	Lys	Thr	His	Ala	Ile	Glu	Phe	Val	Asn	Tyr	Asn	Lys	Arg	Gln	Met		
				455				460						465			
agt	cgc	att	tac	ccc	aag	gga	ggc	cga	gtc	gat	tcc	agt	aat	tac	atg	1676	
Ser	Arg	Ile	Tyr	Pro	Lys	Gly	Gly	Arg	Val	Asp	Ser	Ser	Asn	Tyr	Met		
		470						475					480				
cct	cag	att	ttc	tgg	aac	gct	ggc	tgc	cag	atg	gtt	tca	ctg	aac	tat	1724	
Pro	Gln	Ile	Phe	Trp	Asn	Ala	Gly	Cys	Gln	Met	Val	Ser	Leu	Asn	Tyr		
		485					490					495					
caa	acc	cca	gat	tta	gcg	atg	caa	ttg	aat	cag	gga	aaa	ttt	gag	tat	1772	
Gln	Thr	Pro	Asp	Leu	Ala	Met	Gln	Leu	Asn	Gln	Gly	Lys	Phe	Glu	Tyr		
		500				505					510						
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Asp	Arg	Thr	Phe	Asp	Pro	Phe	Ser	Glu	Thr	Pro	Val	Asp	Gly	Val	Ile		
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Ala	Ala	Thr	Cys	Ser	Val	Gln	Val	Ile	Ser	Gly	Gln	Phe	Leu	Ser	Asp		
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Lys	Lys	Ile	Gly	Thr	Tyr	Val	Glu	Val	Asp	Met	Tyr	Gly	Leu	Pro	Thr		
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gac	acc	ata	cgt	aag	gaa	ttc	cga	act	cgc	atg	gtt	atg	aat	aat	gga	2012	
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ctc	aat	cca	gtt	tac	aat	gaa	gag	tca	ctt	gta	ttt	cgg	aag	gtg	atc	2060	
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cca aca att ttc tgc aat att gtt ctt aaa aca tat gtg cct gat gga	2252
Pro Thr Ile Phe Cys Asn Ile Val Leu Lys Thr Tyr Val Pro Asp Gly	
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Phe Gly Asp Ile Val Asp Ala Leu Ser Asp Pro Lys Thr Phe Leu Ser	
675 680 685 690	
att aca gaa aag aga gca gac caa atg aga gct atg ggc att gag act	2348
Ile Thr Glu Lys Arg Ala Asp Gln Met Arg Ala Met Gly Ile Glu Thr	
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Ser Asp Ile Ala Asp Val Pro Ser Asp Thr Ser Lys Asn Asp Lys Lys	
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Gly Lys Ala Asn Thr Ala Lys Ala Asn Val Thr Pro Gln Ser Ser Ser	
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Lys Lys Gly Ile Glu Leu Ile Pro Gln Val Arg Ile Glu Asp Leu Lys	
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Gln Met Lys Ala Tyr Leu Lys His Leu Lys Lys Gln Gln Lys Glu Leu	
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aat tct tta aag aag aaa cat gca aag gaa cac agt acc atg cag aag	2636
Asn Ser Leu Lys Lys His Ala Lys Glu His Ser Thr Met Gln Lys	
790 795 800	
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Leu His Cys Thr Gln Val Asp Lys Ile Val Ala Gln Tyr Asp Lys Glu	
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aag tcg act cat gag aaa atc cta gag aag gca atg aag aag aaa ggg	2732
Lys Ser Thr His Glu Lys Ile Leu Glu Lys Ala Met Lys Lys Lys Gly	
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Gly Ser Asn Cys Leu Glu Met Lys Lys Glu Thr Glu Ile Lys Ile Gln	
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Thr Leu Thr Ser Asp His Lys Ser Lys Val Lys Glu Ile Val Ala Gln	
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cac aca aag gaa tgg tca gaa atg atc aat act cac agt gct gag gag	2876
His Thr Lys Glu Trp Ser Glu Met Ile Asn Thr His Ser Ala Glu Glu	
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Ser	Met	Glu	Asn	Ser	Lys	Ala	Ile	Ser	Gln	Asp	Lys	Ser	Ile	Lys	Asn		
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Lys	Ala	Glu	Arg	Glu	Arg	Arg	Val	Arg	Glu	Leu	Asn	Ser	Ser	Asn	Thr		
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Lys	Lys	Phe	Leu	Glu	Glu	Arg	Lys	Arg	Leu	Ala	Met	Lys	Gln	Ser	Lys		
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gaa	atg	gat	cag	ttg	aaa	aaa	gtc	cag	ctt	gaa	cat	cta	gaa	ttc	cta	3212	
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Glu	Lys	Gln	Asn	Glu	Gln	Ala	Lys	Glu	Met	Gln	Gln	Met	Val	Lys	Leu		
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Glu	Ala	Glu	Met	Asp	Arg	Arg	Pro	Ala	Thr	Val	Val	*					
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 Pro Arg Thr Asp Ile Glu Asp Leu Phe Lys Lys Ile Asn Gly Asp Lys  
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gagacc atg gcc ccc act cag ggc ccc cgg gcc ccg ctg gaa ttc gga 168
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Gly Pro Leu Gly Ala Ala Leu Leu Leu Leu Leu Pro Ala Thr Met
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Phe His Leu Leu Leu Ala Ala Arg Ser Gly Pro Ala Arg Leu Leu Gly
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Leu Leu Leu Trp Leu Ala Trp Leu Gly Leu Gln Ala Ala Leu Tyr Leu
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ctg ccg gcg cgc aag gtg gcc gaa ggg cag gaa ttg aag gac aag agt 408
Leu Pro Ala Arg Lys Val Ala Glu Gly Gln Glu Leu Lys Asp Lys Ser
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cgc ctg cgc tat cct att aac ggc ttc cag gcc ctg gtg ctg aca gcc 456
Arg Leu Arg Tyr Pro Ile Asn Gly Phe Gln Ala Leu Val Leu Thr Ala
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ctg ttg gtg ggg ctg ggg atg tca gcg ggg ctg cct ctg ggg gcg ctc 504
Leu Leu Val Gly Leu Gly Met Ser Ala Gly Leu Pro Leu Gly Ala Leu
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ccg gaa atg ctc ctg ccc ttg gcg ttt gtc gcc acc ctc acc gct ttc 552
Pro Glu Met Leu Leu Pro Leu Ala Phe Val Ala Thr Leu Thr Ala Phe
      130             135             140

atc ttc agc ctc ttt ctc tac atg aag gcg cag gta gcc cca gtt tcg 600
Ile Phe Ser Leu Phe Leu Tyr Met Lys Ala Gln Val Ala Pro Val Ser
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gcc ctg gca cct ggg ggg aac tca ggc aat ccg att tac gac ttt ttt 648
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ctg gga cga gag ctc aac cct cgt atc tgt ttc ttc gac ttc aaa tat 696
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Ala Leu Leu Met Lys Glu Ala Glu Leu Arg Gly Ser Pro Ser Leu Ala
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atg tgg ctg gtc aat ggc ttc cag ttg ctc tac gtg ggt gat gcc ctc 840

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Trp	His	Glu	Glu	Ala	Val	Leu	Thr	Thr	Met	Asp	Ile	Thr	His	Asp	Gly		
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Phe	Gly	Phe	Met	Leu	Ala	Phe	Gly	Asp	Met	Ala	Trp	Val	Pro	Phe	Thr		
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Tyr	Ser	Leu	Gln	Ala	Gln	Phe	Leu	Leu	His	His	Pro	Gln	Pro	Leu	Gly		
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Leu	Pro	Met	Ala	Ser	Val	Ile	Cys	Leu	Ile	Asn	Ala	Ile	Gly	Tyr	Tyr		
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Ile	Phe	Arg	Gly	Ala	Asn	Ser	Gln	Lys	Asn	Thr	Phe	Arg	Lys	Asn	Pro		
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Arg	Lys	Leu	Leu	Val	Ser	Gly	Trp	Trp	Gly	Met	Val	Arg	His	Pro	Asn		
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Tyr	Leu	Gly	Asp	Leu	Ile	Met	Ala	Leu	Ala	Trp	Ser	Leu	Pro	Cys	Gly		
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Val	Ser	His	Leu	Leu	Pro	Tyr	Phe	Tyr	Leu	Leu	Tyr	Phe	Thr	Ala	Leu		
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Leu	Val	His	Arg	Glu	Ala	Arg	Asp	Glu	Arg	Gln	Cys	Leu	Gln	Lys	Tyr		
		385				390					395						
ggc	ctg	gcc	tgg	cag	gag	tac	tgc	cgg	cgt	gtg	cct	tac	cgc	atc	atg	1368	
Gly	Leu	Ala	Trp	Gln	Glu	Tyr	Cys	Arg	Arg	Val	Pro	Tyr	Arg	Ile	Met		
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Pro	Tyr	Ile	Tyr	*													
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Gly Gly Ser Glu Pro Glu Arg Glu Val Val Val Pro Ile Arg Leu Asp	
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Pro Asp Ile Asn Gly Arg Arg Tyr Tyr Trp Arg Gly Pro Glu Asp Ser	
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Gly Asp Gln Gly Leu Ile Phe Gln Ile Thr Ala Phe Gln Glu Asp Phe	
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Tyr Leu His Leu Thr Pro Asp Ala Gln Phe Leu Ala Pro Ala Phe Ser	
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act gag cat ctg ggc gtc ccc ctc cag ggg ctc acc ggg ggc tct tca	288
Thr Glu His Leu Gly Val Pro Leu Gln Gly Leu Thr Gly Gly Ser Ser	
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gac ctg cga cgc tgc ttc tat tct ggg gac gtg aac gcc gag ccg gac	336
Asp Leu Arg Arg Cys Phe Tyr Ser Gly Asp Val Asn Ala Glu Pro Asp	
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Ser Phe Ala Ala Val Ser Leu Cys Gly Gly Leu Arg Gly Ala Phe Gly	
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Tyr Arg Gly Ala Glu Tyr Val Ile Ser Pro Leu Pro Asn Ala Ser Ala	
130 135 140	
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Ala Ser Gly Trp Asn Pro Ala Ile Leu Arg Ala Leu Asp Pro Tyr Lys	
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Pro Arg Arg Ala Gly Phe Gly Glu Ser Arg Ser Arg Arg Arg Ser Gly	
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Arg Ala Lys Arg Phe Val Ser Ile Pro Arg Tyr Val Glu Thr Leu Val	
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Val Ala Asp Glu Ser Met Val Lys Phe His Gly Ala Asp Leu Glu His	
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Ser	Ile	Leu	Asn	Pro	Ile	Asn	Ile	Val	Val	Val	Lys	Val	Leu	Leu	Leu	
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Arg	Asp	Arg	Asp	Ser	Gly	Pro	Lys	Val	Thr	Gly	Asn	Ala	Ala	Leu	Thr	
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ctg	cgc	aac	ttc	tgt	gcc	tgg	cag	aag	aag	ctg	aac	aaa	gtg	agt	gac	912
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Thr	Met	Cys	Asp	Pro	Lys	Arg	Ser	Cys	Ser	Val	Ile	Glu	Asp	Asp	Gly	
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Asn	Pro	Trp	Ser	Ala	Cys	Ser	Ala	Ala	Ile	Ile	Thr	Asp	Phe	Leu	Asp	
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Ser	Gly	His	Gly	Asp	Cys	Leu	Leu	Asp	Gln	Pro	Ser	Lys	Pro	Ile	Ser	
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tgc	acc	aag	ctg	tgg	tgc	acc	ggg	aag	gcc	aag	gga	cag	atg	gtg	tgc	1440
Cys	Thr	Lys	Leu	Trp	Cys	Thr	Gly	Lys	Ala	Lys	Gly	Gln	Met	Val	Cys	
465					470				475						480	
cag	acc	cgc	cac	ttc	ccc	tgg	gcc	gat	ggc	acc	agc	tgt	ggc	gag	ggc	1488
Gln	Thr	Arg	His	Phe	Pro	Trp	Ala	Asp	Gly	Thr	Ser	Cys	Gly	Glu	Gly	
				485					490					495		

aag ctc tgc ctc aaa ggg gcc tgc gtg gag aga cac aac ctc aac aag	1536
Lys Leu Cys Leu Lys Gly Ala Cys Val Glu Arg His Asn Leu Asn Lys	
500 505 510	
cac agg gtg gat ggt tcc tgg gcc aaa tgg gat ccc tat ggc ccc tgc	1584
His Arg Val Asp Gly Ser Trp Ala Lys Trp Asp Pro Tyr Gly Pro Cys	
515 520 525	
tcg cgc aca tgt ggt ggg ggc gtg cag ctg gcc agg agg cag tgc acc	1632
Ser Arg Thr Cys Gly Gly Gly Val Gln Leu Ala Arg Arg Gln Cys Thr	
530 535 540	
aac ccc acc cct gcc aac ggg ggc aag tac tgc gag gga gtg agg gtg	1680
Asn Pro Thr Pro Ala Asn Gly Gly Lys Tyr Cys Glu Gly Val Arg Val	
545 550 555 560	
aaa tac cga tcc tgc aat ctg gag ccc tgc ccc agc tca gcc tcc gga	1728
Lys Tyr Arg Ser Cys Asn Leu Glu Pro Cys Pro Ser Ser Ala Ser Gly	
565 570 575	
aag agc ttc cgg gag gag cag tgt gag gct ttc aac ggc tac aac cac	1776
Lys Ser Phe Arg Glu Glu Gln Cys Glu Ala Phe Asn Gly Tyr Asn His	
580 585 590	
agc acc aac cgg ctc act ctc gcc gtg gca tgg gtg ccc aag tac tcc	1824
Ser Thr Asn Arg Leu Thr Leu Ala Val Ala Trp Val Pro Lys Tyr Ser	
595 600 605	
ggc gtg tct ccc cgg gac aag tgc aag ctc atc tgc cga gcc aat ggc	1872
Gly Val Ser Pro Arg Asp Lys Cys Lys Leu Ile Cys Arg Ala Asn Gly	
610 615 620	
act ggc tac ttc tat gtg ctg gca ccc aag gtg gtg gac ggc acg ctg	1920
Thr Gly Tyr Phe Tyr Val Leu Ala Pro Lys Val Val Asp Gly Thr Leu	
625 630 635 640	
tgc tct cct gac tcc acc tcc gtc tgt gtc caa ggc aag tgc atc aag	1968
Cys Ser Pro Asp Ser Thr Ser Val Cys Val Gln Gly Lys Cys Ile Lys	
645 650 655	
gct ggc tgt gat ggg aac ctg ggc tcc aag aag aga ttc gac aag tgt	2016
Ala Gly Cys Asp Gly Asn Leu Gly Ser Lys Lys Arg Phe Asp Lys Cys	
660 665 670	
ggg gtg tgt ggg gga gac aat aag agc tgc aag aag gtg act gga ctc	2064
Gly Val Cys Gly Gly Asp Asn Lys Ser Cys Lys Lys Val Thr Gly Leu	
675 680 685	
ttc acc aag ccc atg cat ggc tac aat ttc gtg gtg gcc atc ccc gca	2112
Phe Thr Lys Pro Met His Gly Tyr Asn Phe Val Val Ala Ile Pro Ala	
690 695 700	
ggc gcc tca agc atc gac atc cgc cag cgc ggt tac aaa ggg ctg atc	2160
Gly Ala Ser Ser Ile Asp Ile Arg Gln Arg Gly Tyr Lys Gly Leu Ile	
705 710 715 720	
ggg gat gac aac tac ctg gct ctg aag aac agc caa ggc aag tac ctg	2208
Gly Asp Asp Asn Tyr Leu Ala Leu Lys Asn Ser Gln Gly Lys Tyr Leu	
725 730 735	
ctc aac ggg cat ttc gtg gtg tcg gcg gtg gag cgg gac ctg gtg gtg	2256

Leu Asn Gly His Phe Val Val Ser Ala Val Glu Arg Asp Leu Val Val	
740 745 750	
aag ggc agt ctg ctg cgg tac agc ggc acg ggc aca gcg gtg gag agc	2304
Lys Gly Ser Leu Leu Arg Tyr Ser Gly Thr Gly Thr Ala Val Glu Ser	
755 760 765	
ctg cag gct tcc cgg ccc atc ctg gag ccg ctg acc gtg gag gtc ctc	2352
Leu Gln Ala Ser Arg Pro Ile Leu Glu Pro Leu Thr Val Glu Val Leu	
770 775 780	
tcc gtg ggg aag atg aca ccg ccc cgg gtc cgc tac tcc ttc tat ctg	2400
Ser Val Gly Lys Met Thr Pro Pro Arg Val Arg Tyr Ser Phe Tyr Leu	
785 790 795 800	
ccc aaa gag cct cgg gag gac aag tcc tct cat ccc aag gac ccc cgg	2448
Pro Lys Glu Pro Arg Glu Asp Lys Ser Ser His Pro Lys Asp Pro Arg	
805 810 815	
gga ccc tct gtc ttg cac aac agc gtc ctc agc ctc tcc aac cag gtg	2496
Gly Pro Ser Val Leu His Asn Ser Val Leu Ser Leu Ser Asn Gln Val	
820 825 830	
gag cag ccg gac gac agg ccc cct gca cgc tgg gtg gct ggc agc tgg	2544
Glu Gln Pro Asp Asp Arg Pro Pro Ala Arg Trp Val Ala Gly Ser Trp	
835 840 845	
ggg ccg tgc tcc gcg agc tgc ggc agt ggc ctg cag aag cgg gcg gtg	2592
Gly Pro Cys Ser Ala Ser Cys Gly Ser Gly Leu Gln Lys Arg Ala Val	
850 855 860	
gac tgc cgg ggc tcc gcc ggg cag cgc acg gtc cct gcc tgt gat gca	2640
Asp Cys Arg Gly Ser Ala Gly Gln Arg Thr Val Pro Ala Cys Asp Ala	
865 870 875 880	
gcc cat cgg ccc gtg gag aca caa gcc tgc ggg gag ccc tgc ccc acc	2688
Ala His Arg Pro Val Glu Thr Gln Ala Cys Gly Glu Pro Cys Pro Thr	
885 890 895	
tgg gag ctc agc gcc tgg tca ccc tgc tcc aag agc tgc ggc cgg gga	2736
Trp Glu Leu Ser Ala Trp Ser Pro Cys Ser Lys Ser Cys Gly Arg Gly	
900 905 910	
ttt cag agg cgc tca ctc aag tgt gtg ggc cac gga ggc cgg ctg ctg	2784
Phe Gln Arg Arg Ser Leu Lys Cys Val Gly His Gly Gly Arg Leu Leu	
915 920 925	
gcc cgg gac cag tgc aac ttg cac cgc aag ccc cag gag ctg gac ttc	2832
Ala Arg Asp Gln Cys Asn Leu His Arg Lys Pro Gln Glu Leu Asp Phe	
930 935 940	
tgc gtc ctg agg ccg tgc tga	2853
Cys Val Leu Arg Pro Cys *	
945 950	

<210> 56  
 <211> 950  
 <212> PRT  
 <213> Homo Sapiens

<400> 56



Met	Leu	Leu	Leu	Gly	Ile	Leu	Thr	Leu	Ala	Phe	Ala	Gly	Arg	Thr	Ala
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Gly	Gly	Ser	Glu	Pro	Glu	Arg	Glu	Val	Val	Pro	Ile	Arg	Leu	Asp	
			20					25				30			
Pro	Asp	Ile	Asn	Gly	Arg	Arg	Tyr	Tyr	Trp	Arg	Gly	Pro	Glu	Asp	Ser
		35					40				45				
Gly	Asp	Gln	Gly	Leu	Ile	Phe	Gln	Ile	Thr	Ala	Phe	Gln	Glu	Asp	Phe
	50					55				60					
Tyr	Leu	His	Leu	Thr	Pro	Asp	Ala	Gln	Phe	Leu	Ala	Pro	Ala	Phe	Ser
65					70				75					80	
Thr	Glu	His	Leu	Gly	Val	Pro	Leu	Gln	Gly	Leu	Thr	Gly	Gly	Ser	Ser
				85					90					95	
Asp	Leu	Arg	Arg	Cys	Phe	Tyr	Ser	Gly	Asp	Val	Asn	Ala	Glu	Pro	Asp
			100					105					110		
Ser	Phe	Ala	Ala	Val	Ser	Leu	Cys	Gly	Gly	Leu	Arg	Gly	Ala	Phe	Gly
		115					120					125			
Tyr	Arg	Gly	Ala	Glu	Tyr	Val	Ile	Ser	Pro	Leu	Pro	Asn	Ala	Ser	Ala
	130					135					140				
Pro	Ala	Ala	Gln	Arg	Asn	Ser	Gln	Gly	Ala	His	Leu	Leu	Gln	Arg	Arg
145					150				155					160	
Gly	Val	Pro	Gly	Gly	Pro	Ser	Gly	Asp	Pro	Thr	Ser	Arg	Cys	Gly	Val
				165					170					175	
Ala	Ser	Gly	Trp	Asn	Pro	Ala	Ile	Leu	Arg	Ala	Leu	Asp	Pro	Tyr	Lys
			180					185					190		
Pro	Arg	Arg	Ala	Gly	Phe	Gly	Glu	Ser	Arg	Ser	Arg	Arg	Arg	Ser	Gly
			195				200					205			
Arg	Ala	Lys	Arg	Phe	Val	Ser	Ile	Pro	Arg	Tyr	Val	Glu	Thr	Leu	Val
	210					215					220				
Val	Ala	Asp	Glu	Ser	Met	Val	Lys	Phe	His	Gly	Ala	Asp	Leu	Glu	His
225					230				235					240	
Tyr	Leu	Leu	Thr	Leu	Leu	Ala	Thr	Ala	Ala	Arg	Leu	Tyr	Arg	His	Pro
				245					250					255	
Ser	Ile	Leu	Asn	Pro	Ile	Asn	Ile	Val	Val	Val	Lys	Val	Leu	Leu	Leu
			260					265					270		
Arg	Asp	Arg	Asp	Ser	Gly	Pro	Lys	Val	Thr	Gly	Asn	Ala	Ala	Leu	Thr
		275					280					285			
Leu	Arg	Asn	Phe	Cys	Ala	Trp	Gln	Lys	Lys	Leu	Asn	Lys	Val	Ser	Asp
	290					295					300				
Lys	His	Pro	Glu	Tyr	Trp	Asp	Thr	Ala	Ile	Leu	Phe	Thr	Arg	Gln	Asp
305					310					315				320	
Leu	Cys	Gly	Ala	Thr	Thr	Cys	Asp	Thr	Leu	Gly	Met	Ala	Asp	Val	Gly
				325					330					335	
Thr	Met	Cys	Asp	Pro	Lys	Arg	Ser	Cys	Ser	Val	Ile	Glu	Asp	Asp	Gly
			340					345					350		
Leu	Pro	Ser	Ala	Phe	Thr	Thr	Ala	His	Glu	Leu	Gly	His	Val	Phe	Asn
		355					360					365			
Met	Pro	His	Asp	Asn	Val	Lys	Val	Cys	Glu	Glu	Val	Phe	Gly	Lys	Leu
	370					375					380				
Arg	Ala	Asn	His	Met	Met	Ser	Pro	Thr	Leu	Ile	Gln	Ile	Asp	Arg	Ala
385					390					395				400	
Asn	Pro	Trp	Ser	Ala	Cys	Ser	Ala	Ala	Ile	Ile	Thr	Asp	Phe	Leu	Asp
				405					410					415	
Ser	Gly	His	Gly	Asp	Cys	Leu	Leu	Asp	Gln	Pro	Ser	Lys	Pro	Ile	Ser
			420					425					430		
Leu	Pro	Glu	Asp	Leu	Pro	Gly	Ala	Ser	Tyr	Thr	Leu	Ser	Gln	Gln	Cys
		435					440					445			
Glu	Leu	Ala	Phe	Gly	Val	Gly	Ser	Lys	Pro	Cys	Pro	Tyr	Met	Gln	Tyr
	450					455					460				
Cys	Thr	Lys	Leu	Trp	Cys	Thr	Gly	Lys	Ala	Lys	Gly	Gln	Met	Val	Cys
465					470				475					480	
Gln	Thr	Arg	His	Phe	Pro	Trp	Ala	Asp	Gly	Thr	Ser	Cys	Gly	Glu	Gly
				485					490					495	

Lys	Leu	Cys	Leu	Lys	Gly	Ala	Cys	Val	Glu	Arg	His	Asn	Leu	Asn	Lys	500	505	510
His	Arg	Val	Asp	Gly	Ser	Trp	Ala	Lys	Trp	Asp	Pro	Tyr	Gly	Pro	Cys	515	520	525
Ser	Arg	Thr	Cys	Gly	Gly	Gly	Val	Gln	Leu	Ala	Arg	Arg	Gln	Cys	Thr	530	535	540
Asn	Pro	Thr	Pro	Ala	Asn	Gly	Gly	Lys	Tyr	Cys	Glu	Gly	Val	Arg	Val	545	550	555
Lys	Tyr	Arg	Ser	Cys	Asn	Leu	Glu	Pro	Cys	Pro	Ser	Ser	Ala	Ser	Gly	565	570	575
Lys	Ser	Phe	Arg	Glu	Glu	Gln	Cys	Glu	Ala	Phe	Asn	Gly	Tyr	Asn	His	580	585	590
Ser	Thr	Asn	Arg	Leu	Thr	Leu	Ala	Val	Ala	Trp	Val	Pro	Lys	Tyr	Ser	595	600	605
Gly	Val	Ser	Pro	Arg	Asp	Lys	Cys	Lys	Leu	Ile	Cys	Arg	Ala	Asn	Gly	610	615	620
Thr	Gly	Tyr	Phe	Tyr	Val	Leu	Ala	Pro	Lys	Val	Val	Asp	Gly	Thr	Leu	625	630	635
Cys	Ser	Pro	Asp	Ser	Thr	Ser	Val	Cys	Val	Gln	Gly	Lys	Cys	Ile	Lys	645	650	655
Ala	Gly	Cys	Asp	Gly	Asn	Leu	Gly	Ser	Lys	Lys	Arg	Phe	Asp	Lys	Cys	660	665	670
Gly	Val	Cys	Gly	Gly	Asp	Asn	Lys	Ser	Cys	Lys	Lys	Val	Thr	Gly	Leu	675	680	685
Phe	Thr	Lys	Pro	Met	His	Gly	Tyr	Asn	Phe	Val	Val	Ala	Ile	Pro	Ala	690	695	700
Gly	Ala	Ser	Ser	Ile	Asp	Ile	Arg	Gln	Arg	Gly	Tyr	Lys	Gly	Leu	Ile	705	710	715
Gly	Asp	Asp	Asn	Tyr	Leu	Ala	Leu	Lys	Asn	Ser	Gln	Gly	Lys	Tyr	Leu	725	730	735
Leu	Asn	Gly	His	Phe	Val	Val	Ser	Ala	Val	Glu	Arg	Asp	Leu	Val	Val	740	745	750
Lys	Gly	Ser	Leu	Leu	Arg	Tyr	Ser	Gly	Thr	Gly	Thr	Ala	Val	Glu	Ser	755	760	765
Leu	Gln	Ala	Ser	Arg	Pro	Ile	Leu	Glu	Pro	Leu	Thr	Val	Glu	Val	Leu	770	775	780
Ser	Val	Gly	Lys	Met	Thr	Pro	Pro	Arg	Val	Arg	Tyr	Ser	Phe	Tyr	Leu	785	790	795
Pro	Lys	Glu	Pro	Arg	Glu	Asp	Lys	Ser	Ser	His	Pro	Lys	Asp	Pro	Arg	805	810	815
Gly	Pro	Ser	Val	Leu	His	Asn	Ser	Val	Leu	Ser	Leu	Ser	Asn	Gln	Val	820	825	830
Glu	Gln	Pro	Asp	Asp	Arg	Pro	Pro	Ala	Arg	Trp	Val	Ala	Gly	Ser	Trp	835	840	845
Gly	Pro	Cys	Ser	Ala	Ser	Cys	Gly	Ser	Gly	Leu	Gln	Lys	Arg	Ala	Val	850	855	860
Asp	Cys	Arg	Gly	Ser	Ala	Gly	Gln	Arg	Thr	Val	Pro	Ala	Cys	Asp	Ala	865	870	875
Ala	His	Arg	Pro	Val	Glu	Thr	Gln	Ala	Cys	Gly	Glu	Pro	Cys	Pro	Thr	885	890	895
Trp	Glu	Leu	Ser	Ala	Trp	Ser	Pro	Cys	Ser	Lys	Ser	Cys	Gly	Arg	Gly	900	905	910
Phe	Gln	Arg	Arg	Ser	Leu	Lys	Cys	Val	Gly	His	Gly	Gly	Arg	Leu	Leu	915	920	925
Ala	Arg	Asp	Gln	Cys	Asn	Leu	His	Arg	Lys	Pro	Gln	Glu	Leu	Asp	Phe	930	935	940
Cys	Val	Leu	Arg	Pro	Cys											945	950	

<210> 57

<211> 2481

<212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (110)...(1906)

<400> 57

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 tgagactcgg ggcgccagtc cgggcagggg cagcgggagc cggccggag atg ccc tgt 118  
 Met Pro Cys  
 1

atc caa gcc caa tat ggg aca cca gca ccg agt ccg gga ccc cgt gac 166  
 Ile Gln Ala Gln Tyr Gly Thr Pro Ala Pro Ser Pro Gly Pro Arg Asp  
 5 10 15

cac ctg gca agc gac ccc ctg acc cct gag ttc atc aag ccc acc atg 214  
 His Leu Ala Ser Asp Pro Leu Thr Pro Glu Phe Ile Lys Pro Thr Met  
 20 25 30 35

gac ctg gcc agc ccc gag gca gcc ccc gct gcc ccc act gcc ctg ccc 262  
 Asp Leu Ala Ser Pro Glu Ala Ala Pro Ala Ala Pro Thr Ala Leu Pro  
 40 45 50

agc ttc agc acc ttc atg gac ggc tac aca gga gag ttt gac acc ttc 310  
 Ser Phe Ser Thr Phe Met Asp Gly Tyr Thr Gly Glu Phe Asp Thr Phe  
 55 60 65

ctc tac cag ctg cca gga aca gtc cag cca tgc tcc tca gcc tcc tcc 358  
 Leu Tyr Gln Leu Pro Gly Thr Val Gln Pro Cys Ser Ser Ala Ser Ser  
 70 75 80

tcg gcc tcc tcc aca tcc tcg tcc tca gcc acc tcc cct gcc tct gct 406  
 Ser Ala Ser Ser Thr Ser Ser Ser Ser Ala Thr Ser Pro Ala Ser Ala  
 85 90 95

tcc ttc aag ttc gag gac ttc cag gtg tac ggc tgc tac ccc ggc ccc 454  
 Ser Phe Lys Phe Glu Asp Phe Gln Val Tyr Gly Cys Tyr Pro Gly Pro  
 100 105 110 115

ctg agc ggc cca gtg gat gag gcc ctg tcc tcc agt ggc tct gac tac 502  
 Leu Ser Gly Pro Val Asp Glu Ala Leu Ser Ser Ser Gly Ser Asp Tyr  
 120 125 130

tat ggc agc ccc tgc tcg gcc ccg tcg ccc tcc acg ccc agc ttc cag 550  
 Tyr Gly Ser Pro Cys Ser Ala Pro Ser Pro Ser Thr Pro Ser Phe Gln  
 135 140 145

ccg ccc cag ctc tct ccc tgg gat ggc tcc ttc ggc cac ttc tcg ccc 598  
 Pro Pro Gln Leu Ser Pro Trp Asp Gly Ser Phe Gly His Phe Ser Pro  
 150 155 160

agc cag act tac gaa ggc ctg cgg gca tgg aca gag cag ctg ccc aaa 646  
 Ser Gln Thr Tyr Glu Gly Leu Arg Ala Trp Thr Glu Gln Leu Pro Lys  
 165 170 175

gcc tct ggg ccc cca cag cct cca gcc ttc ttt tcc ttc agt cct ccc 694  
 Ala Ser Gly Pro Pro Gln Pro Pro Ala Phe Phe Ser Phe Ser Pro Pro  
 180 185 190 195

acc ggc ccc agc ccc agc ctg gcc cag agc ccc ctg aag ttg ttc ccc 742

Thr	Gly	Pro	Ser	Pro	Ser	Leu	Ala	Gln	Ser	Pro	Leu	Lys	Leu	Phe	Pro		
				200					205					210			
tca	cag	gcc	acc	cac	cag	ctg	ggg	gag	gga	gag	agc	tat	tcc	atg	cct	790	
Ser	Gln	Ala	Thr	His	Gln	Leu	Gly	Glu	Gly	Glu	Ser	Tyr	Ser	Met	Pro		
			215					220					225				
acg	gcc	ttc	cca	ggg	ttg	gca	ccc	act	tct	cca	cac	ctt	gag	ggc	tcg	838	
Thr	Ala	Phe	Pro	Gly	Leu	Ala	Pro	Thr	Ser	Pro	His	Leu	Glu	Gly	Ser		
		230					235					240					
ggg	ata	ctg	gat	aca	ccc	gtg	acc	tca	acc	aag	gcc	cgg	agc	ggg	gcc	886	
Gly	Ile	Leu	Asp	Thr	Pro	Val	Thr	Ser	Thr	Lys	Ala	Arg	Ser	Gly	Ala		
	245					250					255						
cca	ggg	gga	agt	gaa	ggc	cgc	tgt	gct	gtg	tgt	ggg	gac	aac	gct	tca	934	
Pro	Gly	Gly	Ser	Glu	Gly	Arg	Cys	Ala	Val	Cys	Gly	Asp	Asn	Ala	Ser		
260					265				270						275		
tgc	cag	cat	tat	ggg	gtc	cgc	aca	tgt	gag	ggc	tgc	aag	ggc	ttc	ttc	982	
Cys	Gln	His	Tyr	Gly	Val	Arg	Thr	Cys	Glu	Gly	Cys	Lys	Gly	Phe	Phe		
				280					285					290			
aag	cgc	aca	gtg	cag	aaa	aac	gcc	aag	tac	atc	tgc	ctg	gct	aac	aag	1030	
Lys	Arg	Thr	Val	Gln	Lys	Asn	Ala	Lys	Tyr	Ile	Cys	Leu	Ala	Asn	Lys		
			295					300					305				
gac	tgc	cct	gtg	gac	aag	agg	cgg	cga	aac	cgc	tgc	cag	ttc	tgc	cgc	1078	
Asp	Cys	Pro	Val	Asp	Lys	Arg	Arg	Arg	Asn	Arg	Cys	Gln	Phe	Cys	Arg		
		310					315					320					
ttc	cag	aag	tgc	ctg	gcg	gtg	ggc	atg	gtg	aag	gaa	gtt	gtc	cga	aca	1126	
Phe	Gln	Lys	Cys	Leu	Ala	Val	Gly	Met	Val	Lys	Glu	Val	Val	Arg	Thr		
	325					330					335						
gac	agc	ctg	aag	ggg	cgg	cgg	ggc	cgg	cta	cct	tca	aaa	ccc	aag	cag	1174	
Asp	Ser	Leu	Lys	Gly	Arg	Arg	Gly	Arg	Leu	Pro	Ser	Lys	Pro	Lys	Gln		
340					345					350					355		
ccc	cca	gat	gcc	tcc	cct	gcc	aat	ctc	ctc	act	tcc	ctg	gtc	cgt	gca	1222	
Pro	Pro	Asp	Ala	Ser	Pro	Ala	Asn	Leu	Leu	Thr	Ser	Leu	Val	Arg	Ala		
				360					365					370			
cac	ctg	gac	tca	ggg	ccc	agc	act	gcc	aaa	ctg	gac	tac	tcc	aag	ttc	1270	
His	Leu	Asp	Ser	Gly	Pro	Ser	Thr	Ala	Lys	Leu	Asp	Tyr	Ser	Lys	Phe		
			375					380					385				
cag	gag	ctg	gtg	ctg	ccc	cac	ttt	ggg	aag	gaa	gat	gct	ggg	gat	gta	1318	
Gln	Glu	Leu	Val	Leu	Pro	His	Phe	Gly	Lys	Glu	Asp	Ala	Gly	Asp	Val		
		390					395					400					
cag	cag	ttc	tac	gac	ctg	ctc	tcc	ggg	tct	ctg	gag	gtc	atc	cgc	aag	1366	
Gln	Gln	Phe	Tyr	Asp	Leu	Leu	Ser	Gly	Ser	Leu	Glu	Val	Ile	Arg	Lys		
		405				410					415						
tgg	gcg	gag	aag	atc	cct	ggc	ttt	gct	gag	ctg	tca	ccg	gct	gac	cag	1414	
Trp	Ala	Glu	Lys	Ile	Pro	Gly	Phe	Ala	Glu	Leu	Ser	Pro	Ala	Asp	Gln		
420					425					430					435		
gac	ctg	ttg	ctg	gag	tcg	gcc	ttc	ctg	gag	ctc	ttc	atc	ctc	cgc	ctg	1462	
Asp	Leu	Leu	Leu	Glu	Ser	Ala	Phe	Leu	Glu	Leu	Phe	Ile	Leu	Arg	Leu		
				440					445					450			

gcg tac agg tct aag cca ggc gag ggc aag ctc atc ttc tgc tca ggc	1510
Ala Tyr Arg Ser Lys Pro Gly Glu Gly Lys Leu Ile Phe Cys Ser Gly	
455 460 465	
ctg gtg cta cac cgg ctg cag tgt gcc cgt ggc ttc ggg gac tgg att	1558
Leu Val Leu His Arg Leu Gln Cys Ala Arg Gly Phe Gly Asp Trp Ile	
470 475 480	
gac agt atc ctg gcc ttc tca agg tcc ctg cac agc ttg ctt gtc gat	1606
Asp Ser Ile Leu Ala Phe Ser Arg Ser Leu His Ser Leu Leu Val Asp	
485 490 495	
gtc cct gcc ttc gcc tgc ctc tct gcc ctt gtc ctc atc acc gac cgg	1654
Val Pro Ala Phe Ala Cys Leu Ser Ala Leu Val Leu Ile Thr Asp Arg	
500 505 510 515	
cat ggg ctg cag gag ccg cgg cgg gtg gag gag ctg cag aac cgc atc	1702
His Gly Leu Gln Glu Pro Arg Arg Val Glu Glu Leu Gln Asn Arg Ile	
520 525 530	
gcc agc tgc ctg aag gag cac gtg gca gct gtg gcg ggc gag ccc cag	1750
Ala Ser Cys Leu Lys Glu His Val Ala Ala Val Ala Gly Glu Pro Gln	
535 540 545	
cca gcc agc tgc ctg tca cgt ctg ttg ggc aaa ctg ccc gag ctg cgg	1798
Pro Ala Ser Cys Leu Ser Arg Leu Leu Gly Lys Leu Pro Glu Leu Arg	
550 555 560	
acc ctg tgc acc cag ggc ctg cag cgc atc ttc tac ctc aag ctg gag	1846
Thr Leu Cys Thr Gln Gly Leu Gln Arg Ile Phe Tyr Leu Lys Leu Glu	
565 570 575	
gac ttg gtg ccc cct cca ccc atc att gac aag atc ttc atg gac acg	1894
Asp Leu Val Pro Pro Pro Ile Ile Asp Lys Ile Phe Met Asp Thr	
580 585 590 595	
ctg ccc ttc tga cccctgacctg cctgggaaca cgtgtgcaca tgcgcactct	1946
Leu Pro Phe *	

ctcatatgcc accccatgtg ccttttagtcc acggacccca gagcaccccc aagcctgggc	2006
ttagctgcag aacagagggga cctgctcacc tgcccaaagg ggatgaaggg agggaggctc	2066
aaggcccttg ggggaggggg atgccttcat gggggtgacc cacgatgtgt tcttatcccc	2126
ccgcctggc caccggcctt tatgtttttt gtaagataaa ccgttttttaa cacatagcgc	2186
cgtgctgtaa ataagccag tactgctgta aatacaggaa gaaagagctt gaggtgggag	2246
cgggctggga ggaagggatg ggccccggcc ttccctgggca gcctttccag cctcctgctg	2306
ggctctctct tctaccctc ctccacatg tacatgtaca taaactgtca ctctaggaag	2366
aagacaaatg acagattctg accatttata tttgtgtatt ttccaggatt tatagtatgt	2426
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<210> 58  
 <211> 598  
 <212> PRT  
 <213> Homo Sapiens

<400> 58  
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		35					40					45			
Ala	Leu	Pro	Ser	Phe	Ser	Thr	Phe	Met	Asp	Gly	Tyr	Thr	Gly	Glu	Phe
	50					55					60				
Asp	Thr	Phe	Leu	Tyr	Gln	Leu	Pro	Gly	Thr	Val	Gln	Pro	Cys	Ser	Ser
65					70					75					80
Ala	Ser	Ser	Ser	Ala	Ser	Ser	Thr	Ser	Ser	Ser	Ser	Ala	Thr	Ser	Pro
				85				90						95	
Ala	Ser	Ala	Ser	Phe	Lys	Phe	Glu	Asp	Phe	Gln	Val	Tyr	Gly	Cys	Tyr
			100				105						110		
Pro	Gly	Pro	Leu	Ser	Gly	Pro	Val	Asp	Glu	Ala	Leu	Ser	Ser	Ser	Gly
		115					120					125			
Ser	Asp	Tyr	Tyr	Gly	Ser	Pro	Cys	Ser	Ala	Pro	Ser	Pro	Ser	Thr	Pro
	130					135				140					
Ser	Phe	Gln	Pro	Pro	Gln	Leu	Ser	Pro	Trp	Asp	Gly	Ser	Phe	Gly	His
145					150					155					160
Phe	Ser	Pro	Ser	Gln	Thr	Tyr	Glu	Gly	Leu	Arg	Ala	Trp	Thr	Glu	Gln
				165				170						175	
Leu	Pro	Lys	Ala	Ser	Gly	Pro	Pro	Gln	Pro	Pro	Ala	Phe	Phe	Ser	Phe
			180					185					190		
Ser	Pro	Pro	Thr	Gly	Pro	Ser	Pro	Ser	Leu	Ala	Gln	Ser	Pro	Leu	Lys
		195					200					205			
Leu	Phe	Pro	Ser	Gln	Ala	Thr	His	Gln	Leu	Gly	Glu	Gly	Glu	Ser	Tyr
	210					215					220				
Ser	Met	Pro	Thr	Ala	Phe	Pro	Gly	Leu	Ala	Pro	Thr	Ser	Pro	His	Leu
225					230					235					240
Glu	Gly	Ser	Gly	Ile	Leu	Asp	Thr	Pro	Val	Thr	Ser	Thr	Lys	Ala	Arg
				245					250					255	
Ser	Gly	Ala	Pro	Gly	Gly	Ser	Glu	Gly	Arg	Cys	Ala	Val	Cys	Gly	Asp
			260					265					270		
Asn	Ala	Ser	Cys	Gln	His	Tyr	Gly	Val	Arg	Thr	Cys	Glu	Gly	Cys	Lys
		275					280					285			
Gly	Phe	Phe	Lys	Arg	Thr	Val	Gln	Lys	Asn	Ala	Lys	Tyr	Ile	Cys	Leu
	290					295					300				
Ala	Asn	Lys	Asp	Cys	Pro	Val	Asp	Lys	Arg	Arg	Arg	Asn	Arg	Cys	Gln
305					310					315					320
Phe	Cys	Arg	Phe	Gln	Lys	Cys	Leu	Ala	Val	Gly	Met	Val	Lys	Glu	Val
				325					330					335	
Val	Arg	Thr	Asp	Ser	Leu	Lys	Gly	Arg	Arg	Gly	Arg	Leu	Pro	Ser	Lys
			340					345					350		
Pro	Lys	Gln	Pro	Pro	Asp	Ala	Ser	Pro	Ala	Asn	Leu	Leu	Thr	Ser	Leu
		355					360					365			
Val	Arg	Ala	His	Leu	Asp	Ser	Gly	Pro	Ser	Thr	Ala	Lys	Leu	Asp	Tyr
	370					375					380				
Ser	Lys	Phe	Gln	Glu	Leu	Val	Leu	Pro	His	Phe	Gly	Lys	Glu	Asp	Ala
385					390					395</					

530		535		540
Glu Pro Gln Pro Ala Ser Cys Leu Ser Arg Leu Leu Gly Lys Leu Pro				
545		550		555
Glu Leu Arg Thr Leu Cys Thr Gln Gly Leu Gln Arg Ile Phe Tyr Leu				560
	565		570	
Lys Leu Glu Asp Leu Val Pro Pro Pro Pro Ile Ile Asp Lys Ile Phe				575
	580		585	590
Met Asp Thr Leu Pro Phe				
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<210> 59

<211> 1071

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (106)...(918)

<400> 59

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gaaagaggcc cagagtagag agagagagag accgacgtac acggg atg gct acg gga 117  
Met Ala Thr Gly

1

acg cgc tat gcc ggg aag gtg gtg gtc gtg acc ggg ggc ggg cgc ggc	165
Thr Arg Tyr Ala Gly Lys Val Val Val Val Thr Gly Gly Gly Arg Gly	
5 10 15 20	

atc gga gct ggg atc gtg cgc gcc ttc gtg aac agc ggg gcc cga gtg	213
Ile Gly Ala Gly Ile Val Arg Ala Phe Val Asn Ser Gly Ala Arg Val	
25 30 35	

gtt atc tgc gac aag gat gag tct ggg ggc cgg gcc ctg gag cag gag	261
Val Ile Cys Asp Lys Asp Glu Ser Gly Gly Arg Ala Leu Glu Gln Glu	
40 45 50	

ctc cct gga gct gtc ttt atc ctc tgt gat gtg act cag gaa gat gat	309
Leu Pro Gly Ala Val Phe Ile Leu Cys Asp Val Thr Gln Glu Asp Asp	
55 60 65	

gtg aag acc ctg gtt tct gag acc atc cgc cga ttt ggc cgc ctg gat	357
Val Lys Thr Leu Val Ser Glu Thr Ile Arg Arg Phe Gly Arg Leu Asp	
70 75 80	

tgt gtt gtc aac aac gct ggc cac cac cca ccc cca cag agg cct gag	405
Cys Val Val Asn Asn Ala Gly His His Pro Pro Pro Gln Arg Pro Glu	
85 90 95 100	

gag acc tct gcc cag gga ttc cgc cag ctg ctg gag ctg aac cta ctg	453
Glu Thr Ser Ala Gln Gly Phe Arg Gln Leu Leu Glu Leu Asn Leu Leu	
105 110 115	

ggg acg tac acc ttg acc aag ctc gcc ctc ccc tac ctg cgg aag agt	501
Gly Thr Tyr Thr Leu Thr Lys Leu Ala Leu Pro Tyr Leu Arg Lys Ser	
120 125 130	

caa ggg aat gtc atc aac atc tcc agc ctg gtg ggg gca atc ggc cag	549
Gln Gly Asn Val Ile Asn Ile Ser Ser Leu Val Gly Ala Ile Gly Gln	
135 140 145	

gcc cag gca gtt ccc tat gtg gcc acc aag ggg gca gta aca gcc atg 597  
 Ala Gln Ala Val Pro Tyr Val Ala Thr Lys Gly Ala Val Thr Ala Met  
 150 155 160

acc aaa gct ttg gcc ctg gat gaa agt cca tat ggt gtc cga gtc aac 645  
 Thr Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly Val Arg Val Asn  
 165 170 175 180

tgt atc tcc cca gga aac atc tgg acc ccg ctg tgg gag gag ctg gca 693  
 Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp Glu Glu Leu Ala  
 185 190 195

gcc tta atg cca gac cct agg gcc aca atc cga gag ggc atg ctg gcc 741  
 Ala Leu Met Pro Asp Pro Arg Ala Thr Ile Arg Glu Gly Met Leu Ala  
 200 205 210

cag cca ctg ggc cgc atg ggc cag ccc gct gag gtc ggg gct gcg gca 789  
 Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val Gly Ala Ala Ala  
 215 220 225

gtg ttc ctg gcc tcc gaa gcc aac ttc tgc acg ggc att gaa ctg ctc 837  
 Val Phe Leu Ala Ser Glu Ala Asn Phe Cys Thr Gly Ile Glu Leu Leu  
 230 235 240

gtg acg ggg ggt gca gag ctg ggg tac ggg tgc aag gcc agt cgg agc 885  
 Val Thr Gly Gly Ala Glu Leu Gly Tyr Gly Cys Lys Ala Ser Arg Ser  
 245 250 255 260

acc ccc gtg gac gcc ccc gat atc cct tcc tga tttctctcat ttctacttgg 938  
 Thr Pro Val Asp Ala Pro Asp Ile Pro Ser \*  
 265 270

ggcccccttc ctaggactct cccaccccaa actccaacct gtatcagatg cagcccccaa 998  
 gcccttagac tctaagccca gttagcaagg tgccgggtca ccctgcaggt tcccataaaa 1058  
 acgatttgca gcc 1071

<210> 60  
 <211> 270  
 <212> PRT  
 <213> Homo Sapiens

<400> 60  
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 20 25 30  
 Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly Gly Arg Ala  
 35 40 45  
 Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu Cys Asp Val Thr  
 50 55 60  
 Gln Glu Asp Asp Val Lys Thr Leu Val Ser Glu Thr Ile Arg Arg Phe  
 65 70 75 80  
 Gly Arg Leu Asp Cys Val Val Asn Asn Ala Gly His His Pro Pro Pro  
 85 90 95  
 Gln Arg Pro Glu Thr Ser Ala Gln Gly Phe Arg Gln Leu Leu Glu  
 100 105 110  
 Leu Asn Leu Leu Gly Thr Tyr Thr Leu Thr Lys Leu Ala Leu Pro Tyr  
 115 120 125  
 Leu Arg Lys Ser Gln Gly Asn Val Ile Asn Ile Ser Ser Leu Val Gly  
 130 135 140  
 Ala Ile Gly Gln Ala Gln Ala Val Pro Tyr Val Ala Thr Lys Gly Ala  
 145 150 155 160



Val	Thr	Ala	Met	Thr	Lys	Ala	Leu	Ala	Leu	Asp	Glu	Ser	Pro	Tyr	Gly
				165						170				175	
Val	Arg	Val	Asn	Cys	Ile	Ser	Pro	Gly	Asn	Ile	Trp	Thr	Pro	Leu	Trp
			180					185					190		
Glu	Glu	Leu	Ala	Ala	Leu	Met	Pro	Asp	Pro	Arg	Ala	Thr	Ile	Arg	Glu
		195					200					205			
Gly	Met	Leu	Ala	Gln	Pro	Leu	Gly	Arg	Met	Gly	Gln	Pro	Ala	Glu	Val
	210					215					220				
Gly	Ala	Ala	Ala	Val	Phe	Leu	Ala	Ser	Glu	Ala	Asn	Phe	Cys	Thr	Gly
225					230					235					240
Ile	Glu	Leu	Leu	Val	Thr	Gly	Gly	Ala	Glu	Leu	Gly	Tyr	Gly	Cys	Lys
				245					250					255	
Ala	Ser	Arg	Ser	Thr	Pro	Val	Asp	Ala	Pro	Asp	Ile	Pro	Ser		
			260					265					270		

<210> 61

<211> 2156

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (39)...(1502)

<400> 61

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ctt ttg atg ctg gaa aac ttc ata gat gga aaa ttt tta cct tgt agc 104  
Leu Leu Met Leu Glu Asn Phe Ile Asp Gly Lys Phe Leu Pro Cys Ser  
10 15 20

tca tat ata gat tct tac gac cca tca aca ggg gaa gtg tat tgc aga 152  
Ser Tyr Ile Asp Ser Tyr Asp Pro Ser Thr Gly Glu Val Tyr Cys Arg  
25 30 35

gtg cca aat agt gga aaa gac gag atc gaa gcc gcg gtc aag gcc gcc 200  
Val Pro Asn Ser Gly Lys Asp Glu Ile Glu Ala Ala Val Lys Ala Ala  
40 45 50

aga gaa gcc ttt ccc agc tgg tca tcc cgc agc ccc cag gag cgc tca 248  
Arg Glu Ala Phe Pro Ser Trp Ser Ser Arg Ser Pro Gln Glu Arg Ser  
55 60 65 70

cgg gtc ctg aac cag gtg gcg gat ttg ctg gag cag tcc ctg gag gag 296  
Arg Val Leu Asn Gln Val Ala Asp Leu Leu Glu Gln Ser Leu Glu Glu  
75 80 85

ttt gcc cag gcc gag tct aaa gac caa ggg aaa acc tta gca ctg gca 344  
Phe Ala Gln Ala Glu Ser Lys Asp Gln Gly Lys Thr Leu Ala Leu Ala  
90 95 100

aga acc atg gac att ccc cgg tct gtg cag aac ttc agg ttc ttc gct 392  
Arg Thr Met Asp Ile Pro Arg Ser Val Gln Asn Phe Arg Phe Phe Ala  
105 110 115

tcc tcc agc ctg cac cac acg tca gag tgc acg cag atg gac cac ctg 440  
Ser Ser Ser Leu His His Thr Ser Glu Cys Thr Gln Met Asp His Leu  
120 125 130

ggc tgc atg cac tac acg gtg cgg gcc ccg gtg gga gtc gct ggt ctg	488
Gly Cys Met His Tyr Thr Val Arg Ala Pro Val Gly Val Ala Gly Leu	
135 140 145 150	
atc agc ccc tgg aat ttg cca ctc tac ttg ctg acc tgg aag ata gct	536
Ile Ser Pro Trp Asn Leu Pro Leu Tyr Leu Leu Thr Trp Lys Ile Ala	
155 160 165	
cca gcg atg gct gca ggg aac act gtg ata gcc aag ccc agt gag ctg	584
Pro Ala Met Ala Ala Gly Asn Thr Val Ile Ala Lys Pro Ser Glu Leu	
170 175 180	
act tca gtg act gcg tgg atg ttg tgc aaa ctc ctg gat aaa gca ggt	632
Thr Ser Val Thr Ala Trp Met Leu Cys Lys Leu Leu Asp Lys Ala Gly	
185 190 195	
gtt cca cca ggt gtg gtc aat att gtg ttt gga acc ggg ccc agg gtg	680
Val Pro Pro Gly Val Val Asn Ile Val Phe Gly Thr Gly Pro Arg Val	
200 205 210	
ggg gag gcc ctg gtg tcc cac cca gag gtg ccc ctg atc tcc ttc acc	728
Gly Glu Ala Leu Val Ser His Pro Glu Val Pro Leu Ile Ser Phe Thr	
215 220 225 230	
ggg agc cag ccc acc gct gag cgg atc acc cag ctg agc gct ccc cac	776
Gly Ser Gln Pro Thr Ala Glu Arg Ile Thr Gln Leu Ser Ala Pro His	
235 240 245	
tgc aaa aag ctc tcc ctg gag ctg ggg ggc aag aat cct gcc atc atc	824
Cys Lys Lys Leu Ser Leu Glu Leu Gly Gly Lys Asn Pro Ala Ile Ile	
250 255 260	
ttt gag gac gcc aac ctg gat gag tgc att ccg gca acc gtc agg tcc	872
Phe Glu Asp Ala Asn Leu Asp Glu Cys Ile Pro Ala Thr Val Arg Ser	
265 270 275	
agc ttt gcc aac cag ggt gaa atc tgt ctc tgt acc agc agg atc ttt	920
Ser Phe Ala Asn Gln Gly Glu Ile Cys Leu Cys Thr Ser Arg Ile Phe	
280 285 290	
gtc cag aag agc atc tat agt gaa ttt tta aag aga ttt gta gaa gct	968
Val Gln Lys Ser Ile Tyr Ser Glu Phe Leu Lys Arg Phe Val Glu Ala	
295 300 305 310	
acc aga aag tgg aaa gtc ggc att ccc tct gat cca ctg gtg agc ata	1016
Thr Arg Lys Trp Lys Val Gly Ile Pro Ser Asp Pro Leu Val Ser Ile	
315 320 325	
ggg gct ctg ata agt aaa gca cat ttg gag aaa gtc aga agt tac gtc	1064
Gly Ala Leu Ile Ser Lys Ala His Leu Glu Lys Val Arg Ser Tyr Val	
330 335 340	
aag aga gct ctt gct gaa ggt gcc caa att tgg tgc ggt gag gga gtg	1112
Lys Arg Ala Leu Ala Glu Gly Ala Gln Ile Trp Cys Gly Glu Gly Val	
345 350 355	
gat aag ttg agc ctc cct gcc agg aac cag gca ggc tac ttt atg ctt	1160
Asp Lys Leu Ser Leu Pro Ala Arg Asn Gln Ala Gly Tyr Phe Met Leu	
360 365 370	
ccc acg gtg ata aca gac att aag gat gaa tcc tgc tgc atg acg gaa	1208
Pro Thr Val Ile Thr Asp Ile Lys Asp Glu Ser Cys Cys Met Thr Glu	

375	380	385	390	
gag ata ttt ggt cca gtg acg tgt gtc gtc ccc ttt gat agt gaa gag				1256
Glu Ile Phe Gly Pro Val Thr Cys Val Val Pro Phe Asp Ser Glu Glu				
	395	400	405	
gag gtg att gaa aga gcc aac aac gtt aag tat ggg ctg ggg gct acc				1304
Glu Val Ile Glu Arg Ala Asn Asn Val Lys Tyr Gly Leu Gly Ala Thr				
	410	415	420	
gtg tgg tcc agc aat gtg ggg cgc gtc cac cgg gtg gct aag aag ctg				1352
Val Trp Ser Ser Asn Val Gly Arg Val His Arg Val Ala Lys Lys Leu				
	425	430	435	
cag tct ggc ttg gtc tgg acc aac tgc tgg ctc atc agg gag ctg aac				1400
Gln Ser Gly Leu Val Trp Thr Asn Cys Trp Leu Ile Arg Glu Leu Asn				
	440	445	450	
ctt cct ttc ggg ggg atg aag agt tct gga ata ggt aga gag gga gcc				1448
Leu Pro Phe Gly Gly Met Lys Ser Ser Gly Ile Gly Arg Glu Gly Ala				
	455	460	465	470
aag gac tct tac gac ttc ttc act gag atc aaa acc atc acc gtt aaa				1496
Lys Asp Ser Tyr Asp Phe Phe Thr Glu Ile Lys Thr Ile Thr Val Lys				
	475	480	485	
cac tga tctttgctaa tgggtggagcc actatggcca atgcctggct gcaggcatca				1552
His *				

gttgttcaat	gtggtagatg	aaaatcatgg	catgaattcc	agctatgcct	tgacttggca	1612
gaaggttatc	tctagcttat	cctcagttct	tagtaacttt	accactagat	gaagagatac	1672
tgtctatttt	caatgtggac	tcggaaaaaa	agacttataa	gtaggaagat	agaacaatga	1732
tgccagttgt	caggctcctc	ccaggttatg	ttttcatagt	gtttctttca	tcactctcat	1792
tgaactcttg	ggaatctcca	gataatcaga	ttatttcatt	tggtaaattt	taaaaaatat	1852
gcaatcaggc	acagtgcctc	atgcctataa	tcccagcact	ttgggaggcc	aagggtgggtg	1912
gatcacttga	gttcaggagt	tgcagatcag	cctaggcaac	atggtgaaat	cctgtcttta	1972
ccaaaagttt	aaaaattagc	ttggtgtggt	gccctctgcc	tatagcccca	gctacttggg	2032
aggctgaggt	gggaggatcg	cttgagccca	ggcggttgag	gctgcagtga	gccatgatca	2092
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aaaa						2156

<210> 62  
 <211> 487  
 <212> PRT  
 <213> Homo Sapiens

<400> 62	
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20 25 30	
Gly Glu Val Tyr Cys Arg Val Pro Asn Ser Gly Lys Asp Glu Ile Glu	
35 40 45	
Ala Ala Val Lys Ala Ala Arg Glu Ala Phe Pro Ser Trp Ser Ser Arg	
50 55 60	
Ser Pro Gln Glu Arg Ser Arg Val Leu Asn Gln Val Ala Asp Leu Leu	
65 70 75 80	
Glu Gln Ser Leu Glu Glu Phe Ala Gln Ala Glu Ser Lys Asp Gln Gly	
85 90 95	
Lys Thr Leu Ala Leu Ala Arg Thr Met Asp Ile Pro Arg Ser Val Gln	
100 105 110	

Asn	Phe	Arg	Phe	Phe	Ala	Ser	Ser	Ser	Leu	His	His	Thr	Ser	Glu	Cys	
		115					120					125				
Thr	Gln	Met	Asp	His	Leu	Gly	Cys	Met	His	Tyr	Thr	Val	Arg	Ala	Pro	
	130					135					140					
Val	Gly	Val	Ala	Gly	Leu	Ile	Ser	Pro	Trp	Asn	Leu	Pro	Leu	Tyr	Leu	
145					150					155					160	
Leu	Thr	Trp	Lys	Ile	Ala	Pro	Ala	Met	Ala	Ala	Gly	Asn	Thr	Val	Ile	
			165						170					175		
Ala	Lys	Pro	Ser	Glu	Leu	Thr	Ser	Val	Thr	Ala	Trp	Met	Leu	Cys	Lys	
		180						185					190			
Leu	Leu	Asp	Lys	Ala	Gly	Val	Pro	Pro	Gly	Val	Val	Asn	Ile	Val	Phe	
		195					200					205				
Gly	Thr	Gly	Pro	Arg	Val	Gly	Glu	Ala	Leu	Val	Ser	His	Pro	Glu	Val	
	210					215					220					
Pro	Leu	Ile	Ser	Phe	Thr	Gly	Ser	Gln	Pro	Thr	Ala	Glu	Arg	Ile	Thr	
225					230					235					240	
Gln	Leu	Ser	Ala	Pro	His	Cys	Lys	Lys	Leu	Ser	Leu	Glu	Leu	Gly	Gly	
			245						250					255		
Lys	Asn	Pro	Ala	Ile	Ile	Phe	Glu	Asp	Ala	Asn	Leu	Asp	Glu	Cys	Ile	
		260						265					270			
Pro	Ala	Thr	Val	Arg	Ser	Ser	Phe	Ala	Asn	Gln	Gly	Glu	Ile	Cys	Leu	
		275					280					285				
Cys	Thr	Ser	Arg	Ile	Phe	Val	Gln	Lys	Ser	Ile	Tyr	Ser	Glu	Phe	Leu	
	290					295					300					
Lys	Arg	Phe	Val	Glu	Ala	Thr	Arg	Lys	Trp	Lys	Val	Gly	Ile	Pro	Ser	
305					310					315					320	
Asp	Pro	Leu	Val	Ser	Ile	Gly	Ala	Leu	Ile	Ser	Lys	Ala	His	Leu	Glu	
			325						330					335		
Lys	Val	Arg	Ser	Tyr	Val	Lys	Arg	Ala	Leu	Ala	Glu	Gly	Ala	Gln	Ile	
		340						345					350			
Trp	Cys	Gly	Glu	Gly	Val	Asp	Lys	Leu	Ser	Leu	Pro	Ala	Arg	Asn	Gln	
	355						360					365				
Ala	Gly	Tyr	Phe	Met	Leu	Pro	Thr	Val	Ile	Thr	Asp	Ile	Lys	Asp	Glu	
	370					375					380					
Ser	Cys	Cys	Met	Thr	Glu	Glu	Ile	Phe	Gly	Pro	Val	Thr	Cys	Val	Val	
385					390					395					400	
Pro	Phe	Asp	Ser	Glu	Glu	Val	Ile	Glu	Arg	Ala	Asn	Asn	Val	Lys		
			405						410					415		
Tyr	Gly	Leu	Gly	Ala	Thr	Val	Trp	Ser	Ser	Asn	Val	Gly	Arg	Val	His	
		420						425					430			
Arg	Val	Ala	Lys	Lys	Leu	Gln	Ser	Gly	Leu	Val	Trp	Thr	Asn	Cys	Trp	
		435					440					445				
Leu	Ile	Arg	Glu	Leu	Asn	Leu	Pro	Phe	Gly	Gly	Met	Lys	Ser	Ser	Gly	
	450					455					460					
Ile	Gly	Arg	Glu	Gly	Ala	Lys	Asp	Ser	Tyr	Asp	Phe	Phe	Thr	Glu	Ile	
465					470					475					480	
Lys	Thr	Ile	Thr	Val	Lys	His										
				485												

<210> 63

<211> 1712

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (168)...(1505)

<400> 63

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tctgggcctg ggtttcctga agtcaccaca catagaggag agagaaa atg gct gag	176
Met Ala Glu	
1	
tta aag tac att tct gga ttt ggg aat gag tgt tct tca gag gat cct	224
Leu Lys Tyr Ile Ser Gly Phe Gly Asn Glu Cys Ser Ser Glu Asp Pro	
5 10 15	
cgc tgc cca ggt tcc ctg cca gaa gga cag aat aat cct cag gtc tgc	272
Arg Cys Pro Gly Ser Leu Pro Glu Gly Gln Asn Asn Pro Gln Val Cys	
20 25 30 35	
ccc tac aat ctc tat gct gag cag ctc tca gga tcg gct ttc act tgt	320
Pro Tyr Asn Leu Tyr Ala Glu Gln Leu Ser Gly Ser Ala Phe Thr Cys	
40 45 50	
cca cgg agc acc aat aag aga agc tgg ctg tat agg att cta cct tca	368
Pro Arg Ser Thr Asn Lys Arg Ser Trp Leu Tyr Arg Ile Leu Pro Ser	
55 60 65	
gtt tct cac aag ccc ttt gaa tcc att gac gaa ggc cat gtc act cac	416
Val Ser His Lys Pro Phe Glu Ser Ile Asp Glu Gly His Val Thr His	
70 75 80	
aac tgg gat gaa gtt gat cct gat cct aac cag ctt aga tgg aaa cca	464
Asn Trp Asp Glu Val Asp Pro Asp Pro Asn Gln Leu Arg Trp Lys Pro	
85 90 95	
ttt gag att cca aaa gca tct cag aag aaa gta gac ttt gtg agt ggc	512
Phe Glu Ile Pro Lys Ala Ser Gln Lys Lys Val Asp Phe Val Ser Gly	
100 105 110 115	
ctg cat acc ttg tgt gga gct gga gac ata aag tct aac aat ggg ctt	560
Leu His Thr Leu Cys Gly Ala Gly Asp Ile Lys Ser Asn Asn Gly Leu	
120 125 130	
gct atc cac att ttc ctc tgc aat acc tcc atg gag aac aga tgc ttt	608
Ala Ile His Ile Phe Leu Cys Asn Thr Ser Met Glu Asn Arg Cys Phe	
135 140 145	
tac aat tca gat ggg gac ttc ttg att gtt ccg cag aaa ggg aac ctt	656
Tyr Asn Ser Asp Gly Asp Phe Leu Ile Val Pro Gln Lys Gly Asn Leu	
150 155 160	
ctc att tac acc gag ttt ggc aag atg ctt gta cag ccc aat gag atc	704
Leu Ile Tyr Thr Glu Phe Gly Lys Met Leu Val Gln Pro Asn Glu Ile	
165 170 175	
tgc gtc att cag aga gga atg cgg ttc agc ata gat gtc ttt gag gag	752
Cys Val Ile Gln Arg Gly Met Arg Phe Ser Ile Asp Val Phe Glu Glu	
180 185 190 195	
acc agg ggc tac atc ttg gag gtc tat ggt gtc cac ttt gag tta cct	800
Thr Arg Gly Tyr Ile Leu Glu Val Tyr Gly Val His Phe Glu Leu Pro	
200 205 210	
gac ctt gga cca att ggg gcc aat ggc ttg gcc aat cct cgt gat ttc	848
Asp Leu Gly Pro Ile Gly Ala Asn Gly Leu Ala Asn Pro Arg Asp Phe	
215 220 225	
ttg ata ccc att gcc tgg tat gag gat cgc caa gta cca ggt ggt tac	896
Leu Ile Pro Ile Ala Trp Tyr Glu Asp Arg Gln Val Pro Gly Gly Tyr	

230	235	240	
acg gtc att aat aaa tac cag ggc aag ctg ttt gct gcc aaa cag gat			944
Thr Val Ile Asn Lys Tyr Gln Gly Lys Leu Phe Ala Ala Lys Gln Asp			
245	250	255	
gtc tcc ccg ttc aat gtt gtg gcc tgg cac ggg aat tat aca ccc tac			992
Val Ser Pro Phe Asn Val Val Ala Trp His Gly Asn Tyr Thr Pro Tyr			
260	265	270	275
aag tac aac ctg aag aat ttc atg gtt atc aac tca gtg gcc ttt gac			1040
Lys Tyr Asn Leu Lys Asn Phe Met Val Ile Asn Ser Val Ala Phe Asp			
280	285		290
cat gca gac cca tcc att ttc aca gta ttg act gct aag tct gtc cgc			1088
His Ala Asp Pro Ser Ile Phe Thr Val Leu Thr Ala Lys Ser Val Arg			
295	300		305
cct gga gtg gcc att gct gat ttt gtc atc ttc cca cct cga tgg ggg			1136
Pro Gly Val Ala Ile Ala Asp Phe Val Ile Phe Pro Pro Arg Trp Gly			
310	315		320
gtt gct gat aag acc ttc agg cct cct tat tac cat agg aac tgc atg			1184
Val Ala Asp Lys Thr Phe Arg Pro Pro Tyr Tyr His Arg Asn Cys Met			
325	330		335
agt gag ttc atg gga ctc atc cga ggt cac tat gag gca aag caa ggt			1232
Ser Glu Phe Met Gly Leu Ile Arg Gly His Tyr Glu Ala Lys Gln Gly			
340	345		350
ggg ttc ctg cca ggg gga ggg agt cta cac agc aca atg acc ccc cat			1280
Gly Phe Leu Pro Gly Gly Gly Ser Leu His Ser Thr Met Thr Pro His			
360	365		370
gga cct gat gct gac tgc ttt gag aag gcc agc aag gtc aag ctg gca			1328
Gly Pro Asp Ala Asp Cys Phe Glu Lys Ala Ser Lys Val Lys Leu Ala			
375	380		385
cct gag agg att gcc gat ggc acc atg gca ttt atg ttt gaa tca tct			1376
Pro Glu Arg Ile Ala Asp Gly Thr Met Ala Phe Met Phe Glu Ser Ser			
390	395		400
tta agt ctg gcg gtc aca aag tgg gga ctc aag gcc tcc agg tgt ttg			1424
Leu Ser Leu Ala Val Thr Lys Trp Gly Leu Lys Ala Ser Arg Cys Leu			
405	410		415
gat gag aac tac cac aag tgc tgg gag cca ctc aag agc cac ttc act			1472
Asp Glu Asn Tyr His Lys Cys Trp Glu Pro Leu Lys Ser His Phe Thr			
420	425		430
ccc aac tcc agg aac cca gca gaa cct aat tga gactggaaca ttgctaccat			1525
Pro Asn Ser Arg Asn Pro Ala Glu Pro Asn *			
440	445		
aattaagagt agatttgtga agatttcttc agaattctcat gctttctggt agtattggag			1585
gagggggttg gttaaaatga aaattcactt ttcatagtca agtaactcag aacttttatg			1645
gaaacgcatt tgcaaagttc tatggctgtc accttaatta ctcaataaac ttgctggtgt			1705
tctgtgg			1712

<210> 64  
 <211> 445  
 <212> PRT

<213> Homo Sapiens

<400> 64

Met	Ala	Glu	Leu	Lys	Tyr	Ile	Ser	Gly	Phe	Gly	Asn	Glu	Cys	Ser	Ser	
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			20					25					30			
Gln	Val	Cys	Pro	Tyr	Asn	Leu	Tyr	Ala	Glu	Gln	Leu	Ser	Gly	Ser	Ala	
		35					40					45				
Phe	Thr	Cys	Pro	Arg	Ser	Thr	Asn	Lys	Arg	Ser	Trp	Leu	Tyr	Arg	Ile	
	50					55					60					
Leu	Pro	Ser	Val	Ser	His	Lys	Pro	Phe	Glu	Ser	Ile	Asp	Glu	Gly	His	
65					70					75					80	
Val	Thr	His	Asn	Trp	Asp	Glu	Val	Asp	Pro	Asp	Pro	Asn	Gln	Leu	Arg	
			85						90					95		
Trp	Lys	Pro	Phe	Glu	Ile	Pro	Lys	Ala	Ser	Gln	Lys	Lys	Val	Asp	Phe	
			100					105					110			
Val	Ser	Gly	Leu	His	Thr	Leu	Cys	Gly	Ala	Gly	Asp	Ile	Lys	Ser	Asn	
		115					120					125				
Asn	Gly	Leu	Ala	Ile	His	Ile	Phe	Leu	Cys	Asn	Thr	Ser	Met	Glu	Asn	
	130					135					140					
Arg	Cys	Phe	Tyr	Asn	Ser	Asp	Gly	Asp	Phe	Leu	Ile	Val	Pro	Gln	Lys	
145					150					155					160	
Gly	Asn	Leu	Leu	Ile	Tyr	Thr	Glu	Phe	Gly	Lys	Met	Leu	Val	Gln	Pro	
			165						170					175		
Asn	Glu	Ile	Cys	Val	Ile	Gln	Arg	Gly	Met	Arg	Phe	Ser	Ile	Asp	Val	
		180						185					190			
Phe	Glu	Glu	Thr	Arg	Gly	Tyr	Ile	Leu	Glu	Val	Tyr	Gly	Val	His	Phe	
	195					200						205				
Glu	Leu	Pro	Asp	Leu	Gly	Pro	Ile	Gly	Ala	Asn	Gly	Leu	Ala	Asn	Pro	
	210					215					220					
Arg	Asp	Phe	Leu	Ile	Pro	Ile	Ala	Trp	Tyr	Glu	Asp	Arg	Gln	Val	Pro	
225					230					235					240	
Gly	Gly	Tyr	Thr	Val	Ile	Asn	Lys	Tyr	Gln	Gly	Lys	Leu	Phe	Ala	Ala	
			245						250					255		
Lys	Gln	Asp	Val	Ser	Pro	Phe	Asn	Val	Val	Ala	Trp	His	Gly	Asn	Tyr	
		260						265					270			
Thr	Pro	Tyr	Lys	Tyr	Asn	Leu	Lys	Asn	Phe	Met	Val	Ile	Asn	Ser	Val	
	275					280						285				
Ala	Phe	Asp	His	Ala	Asp	Pro	Ser	Ile	Phe	Thr	Val	Leu	Thr	Ala	Lys	
	290					295					300					
Ser	Val	Arg	Pro	Gly	Val	Ala	Ile	Ala	Asp	Phe	Val	Ile	Phe	Pro	Pro	
305					310					315					320	
Arg	Trp	Gly	Val	Ala	Asp	Lys	Thr	Phe	Arg	Pro	Pro	Tyr	Tyr	His	Arg	
			325						330					335		
Asn	Cys	Met	Ser	Glu	Phe	Met	Gly	Leu	Ile	Arg	Gly	His	Tyr	Glu	Ala	
		340						345					350			
Lys	Gln	Gly	Gly	Phe	Leu	Pro	Gly	Gly	Gly	Ser	Leu	His	Ser	Thr	Met	
		355					360					365				
Thr	Pro	His	Gly	Pro	Asp	Ala	Asp	Cys	Phe	Glu	Lys	Ala	Ser	Lys	Val	
	370					375					380					
Lys	Leu	Ala	Pro	Glu	Arg	Ile	Ala	Asp	Gly	Thr	Met	Ala	Phe	Met	Phe	
385					390					395					400	
Glu	Ser	Ser	Leu	Ser	Leu	Ala	Val	Thr	Lys	Trp	Gly	Leu	Lys	Ala	Ser	
			405						410					415		
Arg	Cys	Leu	Asp	Glu	Asn	Tyr	His	Lys	Cys	Trp	Glu	Pro	Leu	Lys	Ser	
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His	Phe	Thr	Pro	Asn	Ser	Arg	Asn	Pro	Ala	Glu	Pro	Asn				
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<210> 65

<211> 2420  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (27)...(1247)

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aag aag ggc atc cta gaa cgt tta aat gct gga gag att gtg att gga 101
Lys Lys Gly Ile Leu Glu Arg Leu Asn Ala Gly Glu Ile Val Ile Gly
 10                      15          20          25

gat gga ggg ttt gtc ttt gca ctg gag aag agg ggc tac gta aag gca 149
Asp Gly Gly Phe Val Phe Ala Leu Glu Lys Arg Gly Tyr Val Lys Ala
                30                      35          40

gga ccc tgg act cct gaa gct gct gtg gag cac cca gaa gca gtt cgc 197
Gly Pro Trp Thr Pro Glu Ala Ala Val Glu His Pro Glu Ala Val Arg
                45                      50          55

cag ctt cat cga gag ttc ctc aga gct ggc tca aac gtc atg cag acc 245
Gln Leu His Arg Glu Phe Leu Arg Ala Gly Ser Asn Val Met Gln Thr
                60                      65          70

ttc acc ttc tat gcg agt gaa gac aag ctg gag aac agg ggc aac tat 293
Phe Thr Phe Tyr Ala Ser Glu Asp Lys Leu Glu Asn Arg Gly Asn Tyr
                75                      80          85

gtc tta gag aag ata tct ggg cag gaa gtc aat gaa gct gct tgc gac 341
Val Leu Glu Lys Ile Ser Gly Gln Glu Val Asn Glu Ala Ala Cys Asp
 90                      95          100          105

atc gcc cga caa gtg gct gat gaa gga gat gct ttg gta gca gga gga 389
Ile Ala Arg Gln Val Ala Asp Glu Gly Asp Ala Leu Val Ala Gly Gly
                110                      115          120

gtg agt cag aca cct tca tac ctt agc tgc aag agt gaa act gaa gtc 437
Val Ser Gln Thr Pro Ser Tyr Leu Ser Cys Lys Ser Glu Thr Glu Val
                125                      130          135

aaa aaa gta ttt ctg caa cag tta gag gtc ttt atg aag aag aac gtg 485
Lys Lys Val Phe Leu Gln Gln Leu Glu Val Phe Met Lys Lys Asn Val
                140                      145          150

gac ttc ttg att gca gag tat ttt gaa cac gtt gaa gaa gct gtg tgg 533
Asp Phe Leu Ile Ala Glu Tyr Phe Glu His Val Glu Glu Ala Val Trp
                155                      160          165

gca gtt gaa acc ttg ata gca tcc ggt aaa cct gtg gca gca acc atg 581
Ala Val Glu Thr Leu Ile Ala Ser Gly Lys Pro Val Ala Ala Thr Met
 170                      175          180          185

tgc att ggc cca gaa gga gat ttg cat ggc gtg ccc ccc ggc gag tgt 629
Cys Ile Gly Pro Glu Gly Asp Leu His Gly Val Pro Pro Gly Glu Cys
                190                      195          200

gca gtg cgc ctg gtg aaa gca gga gca tcc atc att ggt gtg aac tgc 677

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Ala Val Arg	Leu Val Lys	Ala Gly Ala	Ser Ile Ile	Gly Val Asn	Cys	
	205		210		215	
cac ttt gac	ccc acc att	agt tta aaa	aca gtg aag	ctc atg aag	gag	725
His Phe Asp	Pro Thr Ile	Ser Leu Lys	Thr Val Lys	Leu Met Lys	Glu	
	220		225		230	
ggc ttg gag	gct gcc caa	ctg aaa gct	cac ctg atg	agc cag ccc	ttg	773
Gly Leu Glu	Ala Ala Gln	Leu Lys Ala	His Leu Met	Ser Gln Pro	Leu	
	235		240		245	
gct tac cac	act cct gac	tgc aac aag	cag gga ttc	atc gat ctc	cca	821
Ala Tyr His	Thr Pro Asp	Cys Asn Lys	Gln Gly Phe	Ile Asp Leu	Pro	
	250		255		260	
gaa ttc cca	ttt gga ctg	gaa ccc aga	gtt gcc acc	aga tgg gat	att	869
Glu Phe Pro	Phe Gly Leu	Glu Pro Arg	Val Ala Thr	Arg Trp Asp	Ile	
	270		275		280	
caa aaa tac	gcc aga gag	gcc tac aac	ctg ggg gtc	agg tac att	ggc	917
Gln Lys Tyr	Ala Arg Glu	Ala Tyr Asn	Leu Gly Val	Arg Tyr Ile	Gly	
	285		290		295	
ggg tgc tgt	gga ttt gag	ccc tac cac	atc agg gca	att gca gag	gag	965
Gly Cys Cys	Gly Phe Glu	Pro Tyr His	Ile Arg Ala	Ile Ala Glu	Glu	
	300		305		310	
ctg gcc cca	gaa agg ggc	ttt ttg cca	cca gct tca	gaa aaa cat	ggc	1013
Leu Ala Pro	Glu Arg Gly	Phe Leu Pro	Pro Ala Ser	Glu Lys His	Gly	
	315		320		325	
agc tgg gga	agt ggt ttg	gac atg cac	acc aaa ccc	tgg gtt aga	gca	1061
Ser Trp Gly	Ser Gly Leu	Asp Met His	Thr Lys Pro	Trp Val Arg	Ala	
	330		335		340	
agg gcc agg	aag gaa tac	tgg gag aat	ctt cgg ata	gcc tca ggc	cgg	1109
Arg Ala Arg	Lys Glu Tyr	Trp Glu Asn	Leu Arg Ile	Ala Ser Gly	Arg	
	350		355		360	
cca tac aac	cct tca atg	tca aag cca	gat ggc tgg	gga gtg acc	aaa	1157
Pro Tyr Asn	Pro Ser Met	Ser Lys Pro	Asp Gly Trp	Gly Val Thr	Lys	
	365		370		375	
gga aca gcc	gag ctg atg	cag cag aaa	gaa gcc aca	act gag cag	cag	1205
Gly Thr Ala	Glu Leu Met	Gln Gln Lys	Glu Ala Thr	Thr Thr Glu	Gln	
	380		385		390	
ctg aaa gag	ctc ttt gaa	aaa caa aaa	ttc aaa tca	cag tag		1247
Leu Lys Glu	Leu Phe Glu	Lys Gln Lys	Phe Lys Ser	Gln *		
	395		400		405	
cctcgataga	agctatTTTT	gatgaatttc	taggtgtttg	ggtcacagtt	cctacaaata	1307
cggaaggagg	ggtaaaag	cagtgttttc	atgaatgcca	tcctacacat	attattgcta	1367
ttacctgaac	aaaatagaat	tacaaatagc	acttgataat	tttaaagtat	gttttagaaa	1427
ttttcttagg	agcaaaataa	gtacaaagta	aatcttgaac	aggttcacta	agcaccacc	1487
ctgtgaaaag	tattatggaa	atcactgcag	cacaggaaaa	gtaattcaga	tggttaatgcc	1547
acttgaagaa	gttggtaggc	tagcaaagag	gatgagacat	gaactgtcat	aaaggactca	1607
gcaaccagcc	agggacagat	aaagcgctat	ggaaaggggc	ttccaagtgc	ttttgaacat	1667
gacccttagt	aacaaacaca	atztatataa	tgaccagca	aaacacatca	catcttactg	1727
tcgaaattaa	atgtgtgatc	catcctagta	ttttctgttc	cattcctttt	cattctatctt	1787
catttataaa	acatgctagt	tgagactttt	caaattggatt	tttatgacct	actactgggt	1847
ttggatccac	agtttgaaaa	atattgctac	aagacactta	aggagaccat	cctgtttaag	1907

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tttattctta taagtaggtc agtcatatga gacctgatca ataaatatcc aatacccaga 1967
gtcctgctct cagagttctt ctgtttcgtg acccactttt ctaccagtaa aagacataga 2027
ccaatgggga ggaggggagg agagatggat atttcagccc tctccatcct agtcaacact 2087
ggatccacct agtgcctctg ggccataagg ctgagcagag tgagcttgta ttagttggta 2147
gcttttaaaa aatataataa aaaaaaagta gagattctcc aaactctagc ctggtttctt 2207
agattgagaa ctatgatatt tttctctgat aatttaatat ctactctcct acaaaagctc 2267
aagcctgaag atacaagact attagaagaa acatgactac cctcagtgtg ttagaaaaga 2327
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<210> 66

<211> 406

<212> PRT

<213> Homo Sapiens

<400> 66

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Met Pro Pro Val Gly Gly Lys Lys Ala Lys Lys Gly Ile Leu Glu Arg
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 20          25          30
Leu Glu Lys Arg Gly Tyr Val Lys Ala Gly Pro Trp Thr Pro Glu Ala
 35          40          45
Ala Val Glu His Pro Glu Ala Val Arg Gln Leu His Arg Glu Phe Leu
 50          55          60
Arg Ala Gly Ser Asn Val Met Gln Thr Phe Thr Phe Tyr Ala Ser Glu
 65          70          75          80
Asp Lys Leu Glu Asn Arg Gly Asn Tyr Val Leu Glu Lys Ile Ser Gly
 85          90          95
Gln Glu Val Asn Glu Ala Ala Cys Asp Ile Ala Arg Gln Val Ala Asp
100          105          110
Glu Gly Asp Ala Leu Val Ala Gly Gly Val Ser Gln Thr Pro Ser Tyr
115          120          125
Leu Ser Cys Lys Ser Glu Thr Glu Val Lys Lys Val Phe Leu Gln Gln
130          135          140
Leu Glu Val Phe Met Lys Lys Asn Val Asp Phe Leu Ile Ala Glu Tyr
145          150          155          160
Phe Glu His Val Glu Ala Val Trp Ala Val Glu Thr Leu Ile Ala
165          170          175
Ser Gly Lys Pro Val Ala Ala Thr Met Cys Ile Gly Pro Glu Gly Asp
180          185          190
Leu His Gly Val Pro Pro Gly Glu Cys Ala Val Arg Leu Val Lys Ala
195          200          205
Gly Ala Ser Ile Ile Gly Val Asn Cys His Phe Asp Pro Thr Ile Ser
210          215          220
Leu Lys Thr Val Lys Leu Met Lys Glu Gly Leu Glu Ala Ala Gln Leu
225          230          235          240
Lys Ala His Leu Met Ser Gln Pro Leu Ala Tyr His Thr Pro Asp Cys
245          250          255
Asn Lys Gln Gly Phe Ile Asp Leu Pro Glu Phe Pro Phe Gly Leu Glu
260          265          270
Pro Arg Val Ala Thr Arg Trp Asp Ile Gln Lys Tyr Ala Arg Glu Ala
275          280          285
Tyr Asn Leu Gly Val Arg Tyr Ile Gly Gly Cys Cys Gly Phe Glu Pro
290          295          300
Tyr His Ile Arg Ala Ile Ala Glu Glu Leu Ala Pro Glu Arg Gly Phe
305          310          315          320
Leu Pro Pro Ala Ser Glu Lys His Gly Ser Trp Gly Ser Gly Leu Asp
325          330          335
Met His Thr Lys Pro Trp Val Arg Ala Arg Ala Arg Lys Glu Tyr Trp
340          345          350
Glu Asn Leu Arg Ile Ala Ser Gly Arg Pro Tyr Asn Pro Ser Met Ser
355          360          365

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Lys Pro Asp Gly Trp Gly Val Thr Lys Gly Thr Ala Glu Leu Met Gln  
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 Gln Lys Glu Ala Thr Thr Glu Gln Gln Leu Lys Glu Leu Phe Glu Lys  
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 Gln Lys Phe Lys Ser Gln  
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<210> 67  
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 <212> DNA  
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<220>  
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 <222> (133)...(1878)

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 cccggagcca gg atg ccc gcg ccg cgc gcc cgg gag cag ccc cgc gtg ccc 171  
 Met Pro Ala Pro Arg Ala Arg Glu Gln Pro Arg Val Pro  
 1 5 10

ggg gag cgc cag ccg ctg ctg cct cgc ggt gcg cgg ggc cct cga cgg 219  
 Gly Glu Arg Gln Pro Leu Leu Pro Arg Gly Ala Arg Gly Pro Arg Arg  
 15 20 25

tgg cgg cgg gcg gcg ggc gcg gcc gtg ctg ctg gtg gag atg ctg gag 267  
 Trp Arg Arg Ala Ala Gly Ala Ala Val Leu Leu Val Glu Met Leu Glu  
 30 35 40 45

cgc gcc gcc ttc ttc ggc gtc acc gcc aac ctc gtg ctg tac ctc aac 315  
 Arg Ala Ala Phe Phe Gly Val Thr Ala Asn Leu Val Leu Tyr Leu Asn  
 50 55 60

agc acc aac ttc aac tgg acc ggc gag cag gcg acg cgc gcc gcg ctg 363  
 Ser Thr Asn Phe Asn Trp Thr Gly Glu Gln Ala Thr Arg Ala Ala Leu  
 65 70 75

gta ttc ctg ggc gcc tcc tac ctg ctg gcg ccc gtg ggc ggc tgg ctg 411  
 Val Phe Leu Gly Ala Ser Tyr Leu Leu Ala Pro Val Gly Gly Trp Leu  
 80 85 90

gcc gac gtg tac ctg ggc cgc tac cgc gcg gtc gcg ctc agc ctg ctg 459  
 Ala Asp Val Tyr Leu Gly Arg Tyr Arg Ala Val Ala Leu Ser Leu Leu  
 95 100 105

ctc tac ctg gcc gcc tcg ggc ctg ctg ccc gcc acc gcc ttc ccc gac 507  
 Leu Tyr Leu Ala Ala Ser Gly Leu Leu Pro Ala Thr Ala Phe Pro Asp  
 110 115 120 125

ggc cgc agc tcc ttc tgc gga gag atg ccc gcg tcg ccg ctg gga cct 555  
 Gly Arg Ser Ser Phe Cys Gly Glu Met Pro Ala Ser Pro Leu Gly Pro  
 130 135 140

gcc tgc ccc tcg gcc ggc tgc ccg cgc tcc tcg ccc agc ccc tac tgc 603  
 Ala Cys Pro Ser Ala Gly Cys Pro Arg Ser Ser Pro Ser Pro Tyr Cys  
 145 150 155

gcg ccc gtc ctc tac gcg ggc ctg ctg cta ctc ggc ctg gcc gcc agc 651  
 Ala Pro Val Leu Tyr Ala Gly Leu Leu Leu Leu Gly Leu Ala Ala Ser

160					165					170						
tcc	gtc	cgg	agc	aac	ctc	acc	tcc	ttc	ggc	gcc	gac	cag	gtg	atg	gat	699
Ser	Val	Arg	Ser	Asn	Leu	Thr	Ser	Phe	Gly	Ala	Asp	Gln	Val	Met	Asp	
	175					180					185					
ctc	ggc	cgc	gac	gcc	acc	cgc	cgc	ttc	ttc	aac	tgg	ttt	tac	tgg	agc	747
Leu	Gly	Arg	Asp	Ala	Thr	Arg	Arg	Phe	Phe	Asn	Trp	Phe	Tyr	Trp	Ser	
190					195					200					205	
atc	aac	ctg	ggc	gct	gtg	ctg	tgc	ctg	ctg	gtg	gtg	gcg	ttt	att	cag	795
Ile	Asn	Leu	Gly	Ala	Val	Leu	Ser	Leu	Leu	Val	Val	Ala	Phe	Ile	Gln	
				210				215						220		
cag	aac	atc	agc	ttc	ctg	ctg	ggc	tac	agc	atc	cct	gtg	ggc	tgt	gtg	843
Gln	Asn	Ile	Ser	Phe	Leu	Leu	Gly	Tyr	Ser	Ile	Pro	Val	Gly	Cys	Val	
			225					230					235			
ggc	ctg	gca	ttt	ttc	atc	ttc	ctc	ttt	gcc	acc	ccc	gtc	ttc	atc	acc	891
Gly	Leu	Ala	Phe	Phe	Ile	Phe	Leu	Phe	Ala	Thr	Pro	Val	Phe	Ile	Thr	
	240						245					250				
aag	ccc	ccg	atg	ggc	agc	caa	gtg	tcc	tct	atg	ctt	aag	ctc	gct	ctc	939
Lys	Pro	Pro	Met	Gly	Ser	Gln	Val	Ser	Ser	Met	Leu	Lys	Leu	Ala	Leu	
	255					260					265					
caa	aac	tgc	tgc	ccc	cag	ctg	tgg	caa	cga	cac	tgc	gcc	aga	gac	cgt	987
Gln	Asn	Cys	Cys	Pro	Gln	Leu	Trp	Gln	Arg	His	Ser	Ala	Arg	Asp	Arg	
270					275				280						285	
caa	tgt	gcc	cgc	gtg	ctg	gcc	gac	gag	agg	tct	ccc	cag	cca	ggg	gct	1035
Gln	Cys	Ala	Arg	Val	Leu	Ala	Asp	Glu	Arg	Ser	Pro	Gln	Pro	Gly	Ala	
				290				295						300		
tcc	ccg	caa	gag	gac	atc	gcc	aac	ttc	cag	gtg	ctg	gtg	aag	atc	ttg	1083
Ser	Pro	Gln	Glu	Asp	Ile	Ala	Asn	Phe	Gln	Val	Leu	Val	Lys	Ile	Leu	
			305					310					315			
ccc	gtc	atg	gtg	acc	ctg	gtg	ccc	tac	tgg	atg	gtc	tac	ttc	cag	atg	1131
Pro	Val	Met	Val	Thr	Leu	Val	Pro	Tyr	Trp	Met	Val	Tyr	Phe	Gln	Met	
	320						325					330				
cag	tcc	acc	tat	gtc	ctg	cag	ggc	ctt	cac	ctc	cac	atc	cca	aac	att	1179
Gln	Ser	Thr	Tyr	Val	Leu	Gln	Gly	Leu	His	Leu	His	Ile	Pro	Asn	Ile	
	335				340						345					
ttc	cca	gcc	aac	ccg	gcc	aac	atc	tct	gtg	gcc	ctg	aga	gcc	cag	ggc	1227
Phe	Pro	Ala	Asn	Pro	Ala	Asn	Ile	Ser	Val	Ala	Leu	Arg	Ala	Gln	Gly	
350					355				360					365		
agc	agc	tac	acg	atc	ccg	gaa	gcc	tgg	ctc	ctc	ctg	gcc	aat	gtt	gtg	1275
Ser	Ser	Tyr	Thr	Ile	Pro	Glu	Ala	Trp	Leu	Leu	Leu	Ala	Asn	Val	Val	
				370				375						380		
gtg	gtg	ctg	att	ctg	gtc	cct	ctg	aag	gac	cgc	ttg	atc	gac	cct	tta	1323
Val	Val	Leu	Ile	Leu	Val	Pro	Leu	Lys	Asp	Arg	Leu	Ile	Asp	Pro	Leu	
			385					390					395			
ctg	ctg	cgg	tgc	aag	ctg	ctt	ccc	tct	gct	ctg	cag	aag	atg	gcg	ctg	1371
Leu	Leu	Arg	Cys	Lys	Leu	Leu	Pro	Ser	Ala	Leu	Gln	Lys	Met	Ala	Leu	
	400						405					410				

ggg atg ttc ttt ggt ttt acc tcc gtc att gtg gca gga gtc ctg gag 1419  
 Gly Met Phe Phe Gly Phe Thr Ser Val Ile Val Ala Gly Val Leu Glu  
 415 420 425  
  
 atg gag cgc tta cac tac atc cac cac aac gag acc gtg tcc cag cag 1467  
 Met Glu Arg Leu His Tyr Ile His His Asn Glu Thr Val Ser Gln Gln  
 430 435 440 445  
  
 att ggg gag gtc ctg tac aac gcg gca cca ctg tcc atc tgg tgg cag 1515  
 Ile Gly Glu Val Leu Tyr Asn Ala Ala Pro Leu Ser Ile Trp Trp Gln  
 450 455 460  
  
 atc cct cag tac ctg ctc att ggg atc agt gag atc ttt gcc agc atc 1563  
 Ile Pro Gln Tyr Leu Leu Ile Gly Ile Ser Glu Ile Phe Ala Ser Ile  
 465 470 475  
  
 cca ggc ctg gag ttt gcc tac tca gag gcc ccg cgc tcc atg cag ggc 1611  
 Pro Gly Leu Glu Phe Ala Tyr Ser Glu Ala Pro Arg Ser Met Gln Gly  
 480 485 490  
  
 gcc atc atg ggc atc ttc ttc tgc ctg tcg ggg gtg ggc tca ctg ttg 1659  
 Ala Ile Met Gly Ile Phe Phe Cys Leu Ser Gly Val Gly Ser Leu Leu  
 495 500 505  
  
 ggc tcc agc cta gtg gca ctg ctg tcc ttg ccc ggg ggc tgg ctg cac 1707  
 Gly Ser Ser Leu Val Ala Leu Leu Ser Leu Pro Gly Gly Trp Leu His  
 510 515 520 525  
  
 tgc ccc aag gac ttt ggg aac atc aac aat tgc cgg atg gac ctc tac 1755  
 Cys Pro Lys Asp Phe Gly Asn Ile Asn Asn Cys Arg Met Asp Leu Tyr  
 530 535 540  
  
 ttc ttc ctg ctg gct ggc att cag gcc gtc acg gct ctc cta ttt gtc 1803  
 Phe Phe Leu Leu Ala Gly Ile Gln Ala Val Thr Ala Leu Leu Phe Val  
 545 550 555  
  
 tgg atc gct gga cgc tat gag agg gcg tcc cag ggc cca gcc tcc cac 1851  
 Trp Ile Ala Gly Arg Tyr Glu Arg Ala Ser Gln Gly Pro Ala Ser His  
 560 565 570  
  
 agc cgt ttc agc agg gac agg ggc tga acaggcccta ttccagcccc 1898  
 Ser Arg Phe Ser Arg Asp Arg Gly \*  
 575 580  
  
 cttgcttcac tctaccggac agacggcagc agtcccagct ctggtttcct tctcgggttta 1958  
 ttctgttaga atgaaatggt tcccataaat aaggggcatg agcccttcct cacgaaaaaa 2018  
 aaaaaaaaaa aaaaaaaaaag gtttgcggcc gcaagctta 2057

<210> 68

<211> 581

<212> PRT

<213> Homo Sapiens

<400> 68

Met Pro Ala Pro Arg Ala Arg Glu Gln Pro Arg Val Pro Gly Glu Arg  
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 20 25 30  
 Ala Ala Gly Ala Ala Val Leu Leu Val Glu Met Leu Glu Arg Ala Ala  
 35 40 45  
 Phe Phe Gly Val Thr Ala Asn Leu Val Leu Tyr Leu Asn Ser Thr Asn  
 50 55 60

Phe	Asn	Trp	Thr	Gly	Glu	Gln	Ala	Thr	Arg	Ala	Ala	Leu	Val	Phe	Leu	65	70	75	80
Gly	Ala	Ser	Tyr	Leu	Leu	Ala	Pro	Val	Gly	Gly	Trp	Leu	Ala	Asp	Val	85	90	95	
Tyr	Leu	Gly	Arg	Tyr	Arg	Ala	Val	Ala	Leu	Ser	Leu	Leu	Leu	Tyr	Leu	100	105	110	
Ala	Ala	Ser	Gly	Leu	Leu	Pro	Ala	Thr	Ala	Phe	Pro	Asp	Gly	Arg	Ser	115	120	125	
Ser	Phe	Cys	Gly	Glu	Met	Pro	Ala	Ser	Pro	Leu	Gly	Pro	Ala	Cys	Pro	130	135	140	
Ser	Ala	Gly	Cys	Pro	Arg	Ser	Ser	Pro	Ser	Pro	Tyr	Cys	Ala	Pro	Val	145	150	155	160
Leu	Tyr	Ala	Gly	Leu	Leu	Leu	Leu	Gly	Leu	Ala	Ala	Ser	Ser	Val	Arg	165	170	175	
Ser	Asn	Leu	Thr	Ser	Phe	Gly	Ala	Asp	Gln	Val	Met	Asp	Leu	Gly	Arg	180	185	190	
Asp	Ala	Thr	Arg	Arg	Phe	Phe	Asn	Trp	Phe	Tyr	Trp	Ser	Ile	Asn	Leu	195	200	205	
Gly	Ala	Val	Leu	Ser	Leu	Leu	Val	Val	Ala	Phe	Ile	Gln	Gln	Asn	Ile	210	215	220	
Ser	Phe	Leu	Leu	Gly	Tyr	Ser	Ile	Pro	Val	Gly	Cys	Val	Gly	Leu	Ala	225	230	235	240
Phe	Phe	Ile	Phe	Leu	Phe	Ala	Thr	Pro	Val	Phe	Ile	Thr	Lys	Pro	Pro	245	250	255	
Met	Gly	Ser	Gln	Val	Ser	Ser	Met	Leu	Lys	Leu	Ala	Leu	Gln	Asn	Cys	260	265	270	
Cys	Pro	Gln	Leu	Trp	Gln	Arg	His	Ser	Ala	Arg	Asp	Arg	Gln	Cys	Ala	275	280	285	
Arg	Val	Leu	Ala	Asp	Glu	Arg	Ser	Pro	Gln	Pro	Gly	Ala	Ser	Pro	Gln	290	295	300	
Glu	Asp	Ile	Ala	Asn	Phe	Gln	Val	Leu	Val	Lys	Ile	Leu	Pro	Val	Met	305	310	315	320
Val	Thr	Leu	Val	Pro	Tyr	Trp	Met	Val	Tyr	Phe	Gln	Met	Gln	Ser	Thr	325	330	335	
Tyr	Val	Leu	Gln	Gly	Leu	His	Leu	His	Ile	Pro	Asn	Ile	Phe	Pro	Ala	340	345	350	
Asn	Pro	Ala	Asn	Ile	Ser	Val	Ala	Leu	Arg	Ala	Gln	Gly	Ser	Ser	Tyr	355	360	365	
Thr	Ile	Pro	Glu	Ala	Trp	Leu	Leu	Leu	Ala	Asn	Val	Val	Val	Val	Leu	370	375	380	
Ile	Leu	Val	Pro	Leu	Lys	Asp	Arg	Leu	Ile	Asp	Pro	Leu	Leu	Leu	Arg	385	390	395	400
Cys	Lys	Leu	Leu	Pro	Ser	Ala	Leu	Gln	Lys	Met	Ala	Leu	Gly	Met	Phe	405	410	415	
Phe	Gly	Phe	Thr	Ser	Val	Ile	Val	Ala	Gly	Val	Leu	Glu	Met	Glu	Arg	420	425	430	
Leu	His	Tyr	Ile	His	His	Asn	Glu	Thr	Val	Ser	Gln	Gln	Ile	Gly	Glu	435	440	445	
Val	Leu	Tyr	Asn	Ala	Ala	Pro	Leu	Ser	Ile	Trp	Trp	Gln	Ile	Pro	Gln	450	455	460	
Tyr	Leu	Leu	Ile	Gly	Ile	Ser	Glu	Ile	Phe	Ala	Ser	Ile	Pro	Gly	Leu	465	470	475	480
Glu	Phe	Ala	Tyr	Ser	Glu	Ala	Pro	Arg	Ser	Met	Gln	Gly	Ala	Ile	Met	485	490	495	
Gly	Ile	Phe	Phe	Cys	Leu	Ser	Gly	Val	Gly	Ser	Leu	Leu	Gly	Ser	Ser	500	505	510	
Leu	Val	Ala	Leu	Leu	Ser	Leu	Pro	Gly	Gly	Trp	Leu	His	Cys	Pro	Lys	515	520	525	
Asp	Phe	Gly	Asn	Ile	Asn	Asn	Cys	Arg	Met	Asp	Leu	Tyr	Phe	Phe	Leu	530	535	540	
Leu	Ala	Gly	Ile	Gln	Ala	Val	Thr	Ala	Leu	Leu	Phe	Val	Trp	Ile	Ala	545	550	555	560

Gly Arg Tyr Glu Arg Ala Ser Gln Gly Pro Ala Ser His Ser Arg Phe  
565 570 575  
Ser Arg Asp Arg Gly  
580

<210> 69  
<211> 2109  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)...(2109)

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gag aaa aag aaa aca aga cgc tgc aat gga ttc aag atg ttc ttg gca 96  
Glu Lys Lys Lys Thr Arg Arg Cys Asn Gly Phe Lys Met Phe Leu Ala  
20 25 30  
gcc ctg tca ttc agc tat att gct aaa gca cta ggt gga atc att atg 144  
Ala Leu Ser Phe Ser Tyr Ile Ala Lys Ala Leu Gly Gly Ile Ile Met  
35 40 45  
aaa att tcc atc act caa ata gaa agg aga ttt gac ata tcc tct tct 192  
Lys Ile Ser Ile Thr Gln Ile Glu Arg Arg Phe Asp Ile Ser Ser Ser  
50 55 60  
ctt gct ggt tta att gat gga agc ttt gaa att gga aat ttg ctt gtg 240  
Leu Ala Gly Leu Ile Asp Gly Ser Phe Glu Ile Gly Asn Leu Leu Val  
65 70 75 80  
att gta ttt gta agt tac ttt gga tct aaa cta cac aga ccg aag tta 288  
Ile Val Phe Val Ser Tyr Phe Gly Ser Lys Leu His Arg Pro Lys Leu  
85 90 95  
att gga att ggt tgt ctc ctt atg gga act gga agt att ttg aca tct 336  
Ile Gly Ile Gly Cys Leu Leu Met Gly Thr Gly Ser Ile Leu Thr Ser  
100 105 110  
tta cca cat ttc ttc atg gga tat tat agg tat tct aaa gaa acc cat 384  
Leu Pro His Phe Phe Met Gly Tyr Tyr Arg Tyr Ser Lys Glu Thr His  
115 120 125  
att aat cca tca gaa aat tca aca tca agt tta tca acc tgt tta att 432  
Ile Asn Pro Ser Glu Asn Ser Thr Ser Ser Leu Ser Thr Cys Leu Ile  
130 135 140  
aat caa acc tta tca ttc aat gga aca tca cct gag ata gta gaa aaa 480  
Asn Gln Thr Leu Ser Phe Asn Gly Thr Ser Pro Glu Ile Val Glu Lys  
145 150 155 160  
gat tgt gta aag gaa tct ggg tca cac atg tgg atc tat gtc ttc atg 528  
Asp Cys Val Lys Glu Ser Gly Ser His Met Trp Ile Tyr Val Phe Met  
165 170 175  
ggg aat atg ctt cgt ggc ata ggg gaa acc ccc ata gta cca ttg ggg 576  
Gly Asn Met Leu Arg Gly Ile Gly Glu Thr Pro Ile Val Pro Leu Gly

180										185					190					
att tca tac att gat gat ttt gca aaa gaa gga cat tct tcc ttg tat	624																			
Ile Ser Tyr Ile Asp Asp Phe Ala Lys Glu Gly His Ser Ser Leu Tyr																				
195 200 205																				
tta ggt agt ttg aat gca ata gga atg att ggt cca gtc att ggc ttt	672																			
Leu Gly Ser Leu Asn Ala Ile Gly Met Ile Gly Pro Val Ile Gly Phe																				
210 215 220																				
gca ctg gga tct ctg ttt gct aaa atg tac gtg gat att gga tat gta	720																			
Ala Leu Gly Ser Leu Phe Ala Lys Met Tyr Val Asp Ile Gly Tyr Val																				
225 230 235 240																				
gat ctg agc act atc aga ata act cct aag gac tct cgt tgg gtt gga	768																			
Asp Leu Ser Thr Ile Arg Ile Thr Pro Lys Asp Ser Arg Trp Val Gly																				
245 250 255																				
gct tgg tgg ctt ggt ttc ctt gtg tct gga cta ttt tcc att att tct	816																			
Ala Trp Trp Leu Gly Phe Leu Val Ser Gly Leu Phe Ser Ile Ile Ser																				
260 265 270																				
tcc ata cca ttt ttt ttc ttg ccg aaa aat cca aat aaa cca caa aaa	864																			
Ser Ile Pro Phe Phe Phe Leu Pro Lys Asn Pro Asn Lys Pro Gln Lys																				
275 280 285																				
gaa aga aaa att tca cta tca ttg cat gtg ctg aaa aca aat gat gat	912																			
Glu Arg Lys Ile Ser Leu Ser Leu His Val Leu Lys Thr Asn Asp Asp																				
290 295 300																				
aga aat caa aca gct aat ttg acc aac caa gga aaa aat gtt acc aaa	960																			
Arg Asn Gln Thr Ala Asn Leu Thr Asn Gln Gly Lys Asn Val Thr Lys																				
305 310 315 320																				
aat gtg act ggt ttt ttc cag tct ttg aaa agc atc ctt acc aat ccc	1008																			
Asn Val Thr Gly Phe Phe Gln Ser Leu Lys Ser Ile Leu Thr Asn Pro																				
325 330 335																				
ctg tat gtt ata ttt ctg ctt ttg aca ttg tta caa gta agc agc ttt	1056																			
Leu Tyr Val Ile Phe Leu Leu Leu Thr Leu Leu Gln Val Ser Ser Phe																				
340 345 350																				
att ggt tct ttt act tac gtc ttt aaa tat atg gag caa cag tac ggt	1104																			
Ile Gly Ser Phe Thr Tyr Val Phe Lys Tyr Met Glu Gln Gln Tyr Gly																				
355 360 365																				
cag tct gca tct cat gct aac ttt ttg ttg gga atc ata acc att cct	1152																			
Gln Ser Ala Ser His Ala Asn Phe Leu Leu Gly Ile Ile Thr Ile Pro																				
370 375 380																				
acg gtt gca act gga atg ttt tta gga gga ttt atc att aaa aaa ttc	1200																			
Thr Val Ala Thr Gly Met Phe Leu Gly Gly Phe Ile Ile Lys Lys Phe																				
385 390 395 400																				
aaa ttg tct tta gtt gga att gcc aaa ttt tca ttt ctt act tcg atg	1248																			
Lys Leu Ser Leu Val Gly Ile Ala Lys Phe Ser Phe Leu Thr Ser Met																				
405 410 415																				
ata tcc ttc ttg ttt caa ctt cta tat ttc cct cta atc tgc gaa agc	1296																			
Ile Ser Phe Leu Phe Gln Leu Leu Tyr Phe Pro Leu Ile Cys Glu Ser																				
420 425 430																				



aaa tca gtt gcc ggc cta acc ttg acc tat gat gga aat aat tca gtg	1344
Lys Ser Val Ala Gly Leu Thr Leu Thr Tyr Asp Gly Asn Asn Ser Val	
435 440 445	
gca tct cat gta gat gta cca ctt tct tat tgc aac tca gag tgc aat	1392
Ala Ser His Val Asp Val Pro Leu Ser Tyr Cys Asn Ser Glu Cys Asn	
450 455 460	
tgt gat gaa agt cag tgg gaa cca gtc tgt ggg aac aat gga ata act	1440
Cys Asp Glu Ser Gln Trp Glu Pro Val Cys Gly Asn Asn Gly Ile Thr	
465 470 475 480	
tac ctg tca cct tgt cta gca gga tgc aaa tcc tca agt ggt att aaa	1488
Tyr Leu Ser Pro Cys Leu Ala Gly Cys Lys Ser Ser Ser Gly Ile Lys	
485 490 495	
aag cat aca gtg ttt tat aac tgt agt tgt gtg gaa gta act ggt ctc	1536
Lys His Thr Val Phe Tyr Asn Cys Ser Cys Val Glu Val Thr Gly Leu	
500 505 510	
cag aac aga aat tac tca gca cac ttg ggt gaa tgc cca aga gat aat	1584
Gln Asn Arg Asn Tyr Ser Ala His Leu Gly Glu Cys Pro Arg Asp Asn	
515 520 525	
act tgt aca agg aaa ttt ttc atc tat gtt gca att caa gtc ata aac	1632
Thr Cys Thr Arg Lys Phe Phe Ile Tyr Val Ala Ile Gln Val Ile Asn	
530 535 540	
tct ttg ttc tct gca aca gga ggt acc aca ttt atc ttg ttg act gtg	1680
Ser Leu Phe Ser Ala Thr Gly Gly Thr Thr Phe Ile Leu Leu Thr Val	
545 550 555 560	
aag att gtt caa cct gaa ttg aaa gca ctt gca atg ggt ttc cag tca	1728
Lys Ile Val Gln Pro Glu Leu Lys Ala Leu Ala Met Gly Phe Gln Ser	
565 570 575	
atg gtt ata aga aca cta gga gga att cta gct cca ata tat ttt ggg	1776
Met Val Ile Arg Thr Leu Gly Gly Ile Leu Ala Pro Ile Tyr Phe Gly	
580 585 590	
gct ctg att gat aaa aca tgt atg aag tgg tcc acc aac agc tgt gga	1824
Ala Leu Ile Asp Lys Thr Cys Met Lys Trp Ser Thr Asn Ser Cys Gly	
595 600 605	
gca caa gga gct tgt agg ata tat aat tcc gta ttt ttt gga agg gtc	1872
Ala Gln Gly Ala Cys Arg Ile Tyr Asn Ser Val Phe Phe Gly Arg Val	
610 615 620	
tac ttg ggc tta tct ata gct tta aga ttc cca gca ctt gtt tta tat	1920
Tyr Leu Gly Leu Ser Ile Ala Leu Arg Phe Pro Ala Leu Val Leu Tyr	
625 630 635 640	
att gtt ttc att ttt gct atg aag aaa aaa ttt caa gga aaa gat acc	1968
Ile Val Phe Ile Phe Ala Met Lys Lys Lys Phe Gln Gly Lys Asp Thr	
645 650 655	
aag gca tcg gac aat gaa aga aaa gta atg gat gaa gca aac tta gaa	2016
Lys Ala Ser Asp Asn Glu Arg Lys Val Met Asp Glu Ala Asn Leu Glu	
660 665 670	
ttc tta aat aat ggt gaa cat ttt gta cct tct gct gga aca gat agt	2064
Phe Leu Asn Asn Gly Glu His Phe Val Pro Ser Ala Gly Thr Asp Ser	

675

680

685

aaa aca tgt aat ttg gac atg caa gac aat gct gct gcc aac taa  
 Lys Thr Cys Asn Leu Asp Met Gln Asp Asn Ala Ala Ala Asn \*  
 690 695 700

2109

&lt;210&gt; 70

&lt;211&gt; 702

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 70

Met Asp Gln His Gln His Leu Asn Lys Thr Ala Glu Ser Ala Ser Ser  
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 Glu Lys Lys Lys Thr Arg Arg Cys Asn Gly Phe Lys Met Phe Leu Ala  
 20 25 30  
 Ala Leu Ser Phe Ser Tyr Ile Ala Lys Ala Leu Gly Gly Ile Ile Met  
 35 40 45  
 Lys Ile Ser Ile Thr Gln Ile Glu Arg Arg Phe Asp Ile Ser Ser Ser  
 50 55 60  
 Leu Ala Gly Leu Ile Asp Gly Ser Phe Glu Ile Gly Asn Leu Leu Val  
 65 70 75 80  
 Ile Val Phe Val Ser Tyr Phe Gly Ser Lys Leu His Arg Pro Lys Leu  
 85 90 95  
 Ile Gly Ile Gly Cys Leu Leu Met Gly Thr Gly Ser Ile Leu Thr Ser  
 100 105 110  
 Leu Pro His Phe Phe Met Gly Tyr Arg Tyr Ser Lys Glu Thr His  
 115 120 125  
 Ile Asn Pro Ser Glu Asn Ser Thr Ser Ser Leu Ser Thr Cys Leu Ile  
 130 135 140  
 Asn Gln Thr Leu Ser Phe Asn Gly Thr Ser Pro Glu Ile Val Glu Lys  
 145 150 155 160  
 Asp Cys Val Lys Glu Ser Gly Ser His Met Trp Ile Tyr Val Phe Met  
 165 170 175  
 Gly Asn Met Leu Arg Gly Ile Gly Glu Thr Pro Ile Val Pro Leu Gly  
 180 185 190  
 Ile Ser Tyr Ile Asp Asp Phe Ala Lys Glu Gly His Ser Ser Leu Tyr  
 195 200 205  
 Leu Gly Ser Leu Asn Ala Ile Gly Met Ile Gly Pro Val Ile Gly Phe  
 210 215 220  
 Ala Leu Gly Ser Leu Phe Ala Lys Met Tyr Val Asp Ile Gly Tyr Val  
 225 230 235 240  
 Asp Leu Ser Thr Ile Arg Ile Thr Pro Lys Asp Ser Arg Trp Val Gly  
 245 250 255  
 Ala Trp Trp Leu Gly Phe Leu Val Ser Gly Leu Phe Ser Ile Ile Ser  
 260 265 270  
 Ser Ile Pro Phe Phe Phe Leu Pro Lys Asn Pro Asn Lys Pro Gln Lys  
 275 280 285  
 Glu Arg Lys Ile Ser Leu Ser Leu His Val Leu Lys Thr Asn Asp Asp  
 290 295 300  
 Arg Asn Gln Thr Ala Asn Leu Thr Asn Gln Gly Lys Asn Val Thr Lys  
 305 310 315 320  
 Asn Val Thr Gly Phe Phe Gln Ser Leu Lys Ser Ile Leu Thr Asn Pro  
 325 330 335  
 Leu Tyr Val Ile Phe Leu Leu Leu Thr Leu Leu Gln Val Ser Ser Phe  
 340 345 350  
 Ile Gly Ser Phe Thr Tyr Val Phe Lys Tyr Met Glu Gln Gln Tyr Gly  
 355 360 365  
 Gln Ser Ala Ser His Ala Asn Phe Leu Leu Gly Ile Ile Thr Ile Pro  
 370 375 380

Thr	Val	Ala	Thr	Gly	Met	Phe	Leu	Gly	Gly	Phe	Ile	Ile	Lys	Lys	Phe	385		390		395		400
Lys	Leu	Ser	Leu	Val	Gly	Ile	Ala	Lys	Phe	Ser	Phe	Leu	Thr	Ser	Met		405		410		415	
Ile	Ser	Phe	Leu	Phe	Gln	Leu	Leu	Tyr	Phe	Pro	Leu	Ile	Cys	Glu	Ser		420		425		430	
Lys	Ser	Val	Ala	Gly	Leu	Thr	Leu	Thr	Tyr	Asp	Gly	Asn	Asn	Ser	Val		435		440		445	
Ala	Ser	His	Val	Asp	Val	Pro	Leu	Ser	Tyr	Cys	Asn	Ser	Glu	Cys	Asn		450		455		460	
Cys	Asp	Glu	Ser	Gln	Trp	Glu	Pro	Val	Cys	Gly	Asn	Asn	Gly	Ile	Thr	465		470		475		480
Tyr	Leu	Ser	Pro	Cys	Leu	Ala	Gly	Cys	Lys	Ser	Ser	Ser	Gly	Ile	Lys		485		490		495	
Lys	His	Thr	Val	Phe	Tyr	Asn	Cys	Ser	Cys	Val	Glu	Val	Thr	Gly	Leu		500		505		510	
Gln	Asn	Arg	Asn	Tyr	Ser	Ala	His	Leu	Gly	Glu	Cys	Pro	Arg	Asp	Asn		515		520		525	
Thr	Cys	Thr	Arg	Lys	Phe	Phe	Ile	Tyr	Val	Ala	Ile	Gln	Val	Ile	Asn		530		535		540	
Ser	Leu	Phe	Ser	Ala	Thr	Gly	Gly	Thr	Thr	Phe	Ile	Leu	Leu	Thr	Val	545		550		555		560
Lys	Ile	Val	Gln	Pro	Glu	Leu	Lys	Ala	Leu	Ala	Met	Gly	Phe	Gln	Ser		565		570		575	
Met	Val	Ile	Arg	Thr	Leu	Gly	Gly	Ile	Leu	Ala	Pro	Ile	Tyr	Phe	Gly		580		585		590	
Ala	Leu	Ile	Asp	Lys	Thr	Cys	Met	Lys	Trp	Ser	Thr	Asn	Ser	Cys	Gly		595		600		605	
Ala	Gln	Gly	Ala	Cys	Arg	Ile	Tyr	Asn	Ser	Val	Phe	Phe	Gly	Arg	Val	610		615		620		
Tyr	Leu	Gly	Leu	Ser	Ile	Ala	Leu	Arg	Phe	Pro	Ala	Leu	Val	Leu	Tyr	625		630		635		640
Ile	Val	Phe	Ile	Phe	Ala	Met	Lys	Lys	Lys	Phe	Gln	Gly	Lys	Asp	Thr		645		650		655	
Lys	Ala	Ser	Asp	Asn	Glu	Arg	Lys	Val	Met	Asp	Glu	Ala	Asn	Leu	Glu		660		665		670	
Phe	Leu	Asn	Asn	Gly	Glu	His	Phe	Val	Pro	Ser	Ala	Gly	Thr	Asp	Ser		675		680		685	
Lys	Thr	Cys	Asn	Leu	Asp	Met	Gln	Asp	Asn	Ala	Ala	Ala	Asn			690		695		700		

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<211> 6780

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (290)...(5425)

<221> misc\_feature

<222> (1)...(6780)

<223> n = A,T,C or G

<400> 71

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gccgctgctg ccggggctcg cagccgccga gcccccgagg gcgcgccctg acggactggc 240
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Met Ser Ala

```

aag	gtg	cgg	ctc	aag	aag	ctg	gag	cag	ctg	ctc	ctg	gac	ggg	ccc	tgg	346
Lys	Val	Arg	Leu	Lys	Lys	Leu	Glu	Gln	Leu	Leu	Leu	Asp	Gly	Pro	Trp	
	5					10					15					
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Arg	Asn	Glu	Ser	Ala	Leu	Ser	Val	Glu	Thr	Leu	Leu	Asp	Val	Leu	Val	
	20				25					30					35	
tgc	ctg	tac	acc	gag	tgc	agc	cac	tgc	gcc	ctg	cgc	cgc	gac	aag	tac	442
Cys	Leu	Tyr	Thr	Glu	Cys	Ser	His	Ser	Ala	Leu	Arg	Arg	Asp	Lys	Tyr	
				40					45					50		
gtg	gcc	gag	ttc	ctc	gag	tgg	gct	aaa	cca	ttt	aca	cag	ctg	gtg	aaa	490
Val	Ala	Glu	Phe	Leu	Glu	Trp	Ala	Lys	Pro	Phe	Thr	Gln	Leu	Val	Lys	
			55					60					65			
gaa	atg	cag	ctt	cat	cga	gaa	gac	ttt	gaa	ata	att	aaa	gta	att	gga	538
Glu	Met	Gln	Leu	His	Arg	Glu	Asp	Phe	Glu	Ile	Ile	Lys	Val	Ile	Gly	
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Arg	Gly	Ala	Phe	Gly	Glu	Val	Ala	Val	Val	Lys	Met	Lys	Asn	Thr	Glu	
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Arg	Ile	Tyr	Ala	Met	Lys	Ile	Leu	Asn	Lys	Trp	Glu	Met	Leu	Lys	Arg	
	100				105					110				115		
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Ala	Glu	Thr	Ala	Cys	Phe	Arg	Glu	Glu	Arg	Asp	Val	Leu	Val	Asn	Gly	
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gac	tgc	cag	tgg	atc	acc	gcg	ctg	cac	tac	gcc	ttt	cag	gac	gag	aac	730
Asp	Cys	Gln	Trp	Ile	Thr	Ala	Leu	His	Tyr	Ala	Phe	Gln	Asp	Glu	Asn	
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His	Leu	Tyr	Leu	Val	Met	Asp	Tyr	Tyr	Val	Gly	Gly	Asp	Leu	Leu	Thr	
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Leu	Leu	Ser	Lys	Phe	Glu	Asp	Lys	Leu	Pro	Glu	Asp	Met	Ala	Arg	Phe	
	165					170					175					
tac	att	ggg	gaa	atg	gtg	ctg	gcc	att	gac	tcc	atc	cat	cag	ctt	cat	874
Tyr	Ile	Gly	Glu	Met	Val	Leu	Ala	Ile	Asp	Ser	Ile	His	Gln	Leu	His	
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tac	gtg	cac	aga	gac	att	aaa	cct	gac	aat	gtc	ctt	ttg	gac	gtg	aat	922
Tyr	Val	His	Arg	Asp	Ile	Lys	Pro	Asp	Asn	Val	Leu	Leu	Asp	Val	Asn	
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ggg	cat	atc	cgc	ctg	gct	gac	ttt	gga	tca	tgt	ttg	aag	atg	aat	gat	970
Gly	His	Ile	Arg	Leu	Ala	Asp	Phe	Gly	Ser	Cys	Leu	Lys	Met	Asn	Asp	
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gat	ggc	act	gtg	cag	tcc	tcc	gtg	gcc	gtg	ggc	aca	cct	gac	tac	atc	1018
Asp	Gly	Thr	Val	Gln	Ser	Ser	Val	Ala	Val	Gly	Thr	Pro	Asp	Tyr	Ile	
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Pro Glu Cys Asp Trp Trp Ser Leu Gly Val Cys Met Tyr Glu Met Leu	
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Tyr Gly Glu Thr Pro Phe Tyr Ala Glu Ser Leu Val Glu Thr Tyr Gly	
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Lys Ile Met Asn His Glu Glu Arg Phe Gln Phe Pro Ser His Val Thr	
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Asp Val Ser Glu Glu Ala Lys Asp Leu Ile Gln Arg Leu Ile Cys Ser	
310 315 320	
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Ala Phe Phe Glu Gly Leu Asn Trp Glu Asn Ile Arg Asn Leu Glu Ala	
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His Thr Gly Phe Ser Gly Leu His Leu Pro Phe Ile Gly Phe Thr Phe	
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Thr Thr Glu Ser Cys Phe Ser Asp Arg Gly Ser Leu Lys Ser Ile Met	
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Gln Ser Asn Thr Leu Thr Lys Asp Glu Asp Val Gln Arg Asp Leu Glu	
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His Ser Leu Gln Met Glu Ala Tyr Glu Arg Arg Ile Arg Arg Leu Glu	
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Val Gln Ser Leu His Gly Ser Ser Arg Ala Leu Ser Asn Ser Asn Arg	
470 475 480	
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Asp Lys Glu Ile Lys Lys Leu Asn Glu Glu Ile Glu Arg Leu Lys Asn	

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Gly Thr Ile Lys Asp Lys Tyr Glu Arg Glu Arg Ala Met Leu Phe Asp	
760 765 770	
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Glu Ile Ile Gln Trp Val Ser Asp Glu Lys Asp Ala Arg Gly Tyr Leu	
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Gln Ala Leu Ala Ser Lys Met Thr Glu Glu Leu Glu Ala Leu Arg Ser	
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Ser Gln Lys Leu Asp Met Ser Ala Arg Leu Glu Leu Gln Ser Ala Leu	
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885 890 895	
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Val Lys Asp Ala Asn Leu Thr Leu Glu Ser Lys Leu Lys Asp Ser Glu	
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gcc aaa aac aga gaa tta tta gaa gaa atg gaa att ttg aag aaa aag	3082
Ala Lys Asn Arg Glu Leu Leu Glu Glu Met Glu Ile Leu Lys Lys Lys	
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Val Thr Val Tyr Ser Glu Tyr Gly Val Asp Val Phe Asp Val Arg Thr	

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Lys Pro Tyr Ile Ser Trp Pro Ser Ser Gly Gly Ser Glu Pro Ser Val			
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Thr Val Pro Leu Arg Ser Met Ser Asp Pro Asp Gln Asp Phe Asp Lys			
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Val Leu Val Cys Leu Tyr Thr Glu Cys Ser His Ser Ala Leu Arg Arg
35          40          45
Asp Lys Tyr Val Ala Glu Phe Leu Glu Trp Ala Lys Pro Phe Thr Gln
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Leu Val Lys Glu Met Gln Leu His Arg Glu Asp Phe Glu Ile Ile Lys
65          70          75          80
Val Ile Gly Arg Gly Ala Phe Gly Glu Val Ala Val Val Lys Met Lys
85          90          95
Asn Thr Glu Arg Ile Tyr Ala Met Lys Ile Leu Asn Lys Trp Glu Met
100         105         110
Leu Lys Arg Ala Glu Thr Ala Cys Phe Arg Glu Glu Arg Asp Val Leu
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Val Asn Gly Asp Cys Gln Trp Ile Thr Ala Leu His Tyr Ala Phe Gln
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Asp Glu Asn His Leu Tyr Leu Val Met Asp Tyr Tyr Val Gly Gly Asp
145         150         155         160
Leu Leu Thr Leu Leu Ser Lys Phe Glu Asp Lys Leu Pro Glu Asp Met
165         170         175
Ala Arg Phe Tyr Ile Gly Glu Met Val Leu Ala Ile Asp Ser Ile His
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Gln Leu His Tyr Val His Arg Asp Ile Lys Pro Asp Asn Val Leu Leu
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Asp Val Asn Gly His Ile Arg Leu Ala Asp Phe Gly Ser Cys Leu Lys
210         215         220
Met Asn Asp Asp Gly Thr Val Gln Ser Ser Val Ala Val Gly Thr Pro
225         230         235         240
Asp Tyr Ile Ser Pro Glu Ile Leu Gln Ala Met Glu Asp Gly Met Gly
245         250         255
Lys Tyr Gly Pro Glu Cys Asp Trp Trp Ser Leu Gly Val Cys Met Tyr
260         265         270
Glu Met Leu Tyr Gly Glu Thr Pro Phe Tyr Ala Glu Ser Leu Val Glu
275         280         285

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His	Val	Thr	Asp	Val	Ser	Glu	Glu	Ala	Lys	Asp	Leu	Ile	Gln	Arg	Leu
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Ile	Cys	Ser	Arg	Glu	Arg	Arg	Leu	Gly	Gln	Asn	Gly	Ile	Glu	Asp	Phe
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Phe	Thr	Phe	Thr	Thr	Glu	Ser	Cys	Phe	Ser	Asp	Arg	Gly	Ser	Leu	Lys
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Ser	Ile	Met	Gln	Ser	Asn	Thr	Leu	Thr	Lys	Asp	Glu	Asp	Val	Gln	Arg
			420					425					430		
Asp	Leu	Glu	His	Ser	Leu	Gln	Met	Glu	Ala	Tyr	Glu	Arg	Arg	Ile	Arg
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Arg	Leu	Glu	Gln	Glu	Lys	Leu	Glu	Leu	Ser	Arg	Lys	Leu	Gln	Glu	Ser
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Ser	Asn	Arg	Asp	Lys	Glu	Ile	Lys	Lys	Leu	Asn	Glu	Glu	Ile	Glu	Arg
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Leu	Lys	Asn	Lys	Ile	Ala	Asp	Ser	Asn	Arg	Leu	Glu	Arg	Gln	Leu	Glu
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Arg	Gly	Leu	Glu	Lys	Gln	His	Arg	Val	Val	Arg	Gln	Glu	Lys	Glu	Glu
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Leu	His	Lys	Gln	Leu	Val	Glu	Ala	Ser	Glu	Arg	Leu	Lys	Ser	Gln	Ala
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Lys	Glu	Leu	Lys	Asp	Ala	His	Gln	Gln	Arg	Lys	Leu	Ala	Leu	Gln	Glu
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Phe	Ser	Glu	Leu	Asn	Glu	Arg	Met	Ala	Glu	Leu	Arg	Ala	Gln	Lys	Gln
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Ser	Lys	Glu	Arg	Lys	Leu	Arg	Glu	His	Ser	Glu	Asn	Phe	Cys	Lys	Gln
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Met	Glu	Ser	Glu	Leu	Glu	Ala	Leu	Lys	Val	Lys	Gln	Gly	Gly	Arg	Gly
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Ala	Gly	Ala	Thr	Leu	Glu	His	Gln	Gln	Glu	Ile	Ser	Lys	Ile	Lys	Ser
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Glu	Leu	Glu	Lys	Lys	Val	Leu	Phe	Tyr	Glu	Glu	Glu	Leu	Val	Arg	Arg
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Glu	Ala	Ser	His	Val	Leu	Glu	Val	Lys	Asn	Val	Lys	Lys	Glu	Val	His
705					710					715					720
Asp	Ser	Glu	Ser	His	Gln	Leu	Ala	Leu	Gln	Lys	Glu	Ile	Leu	Met	Leu
				725					730					735	
Lys	Asp	Lys	Leu	Glu	Lys	Ser	Lys	Arg	Glu	Arg	His	Asn	Glu	Met	Glu
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Glu	Ala	Val	Gly	Thr	Ile	Lys	Asp	Lys	Tyr	Glu	Arg	Glu	Arg	Ala	Met
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Leu	Phe	Asp	Glu	Asn	Lys	Lys	Leu	Thr	Ala	Glu	Asn	Glu	Lys	Leu	Cys
	770					775					780				

Ser	Phe	Val	Asp	Lys	Leu	Thr	Ala	Gln	Asn	Arg	Gln	Leu	Glu	Asp	Glu	785	790	795	800
Leu	Gln	Asp	Leu	Ala	Ala	Lys	Lys	Glu	Ser	Val	Ala	His	Trp	Glu	Ala	805	810	815	
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Gly	Tyr	Leu	Gln	Ala	Leu	Ala	Ser	Lys	Met	Thr	Glu	Glu	Leu	Glu	Ala	835	840	845	
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Ser	Ala	Leu	Glu	Ala	Glu	Ile	Arg	Ala	Lys	Gln	Leu	Val	Gln	Glu	Glu	885	890	895	
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Val	Cys	Glu	Cys	Lys	Leu	Phe	Leu	Tyr	Asp	Leu	Pro	Glu	Gly	Lys	Ser	1125	1130	1135	
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Met Gly Leu Thr Tyr Leu Gly Ser Pro Phe Gly Gly Trp Leu Ala Asp
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Pro Asp Ala Ala Ala Arg Cys Cys Ser Pro Ala Thr Phe Ala Gly Leu
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Val Leu Val Gly Leu Gly Val Ala Thr Val Lys Ala Asn Ile Thr Pro
          85           90           95

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Phe Gly Ala Asp Gln Val Lys Asp Arg Gly Pro Glu Ala Thr Arg Arg
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Ser Gly Glu Arg Gln Ser Asn Gly Glu Gly Ile Gly Val Phe Gln Gln
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tct tct aaa caa agt ctg ttt gat tca tgt aag atg tct cat ggt ggg 852
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Ile Ser Asn Ile Thr Thr Thr Pro His Thr Leu Pro Ala Ala Trp Leu	
275 280 285	
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Thr Met Phe Asp Ala Val Leu Ile Leu Leu Leu Ile Pro Leu Lys Asp	
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Lys Leu Val Asp Pro Ile Leu Arg Arg His Gly Leu Leu Pro Ser Ser	
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Leu Lys Arg Ile Ala Val Gly Met Phe Phe Val Met Cys Ser Ala Phe	
325 330 335	
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Ala Ala Gly Ile Leu Glu Ser Lys Arg Leu Asn Leu Val Lys Glu Lys	
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Ile Phe Ala Ser Ile Ala Gly Leu Glu Phe Ala Tyr Ser Ala Ala Pro	
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Lys Ser Met Gln Ser Ala Ile Met Gly Leu Phe Phe Phe Phe Ser Gly	
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Thr Leu Leu Leu Phe Leu Ile Ile Ser Val Lys Tyr Asp His His Arg  
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 Asp His Gln Arg Ser Arg Ala Asn Gly Val Pro Thr Ser Arg Arg Ala  
 485 490 495

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 attaaaaata attgaaagtg ttaaagtgtg acttgagctg tttgaccagt cacatttttg 2561  
 tattgttact gtacgtgtat ctggggcttc tccgtttgtt aatacttttt ctgtatttgt 2621  
 tgctgtattt ttggcataac tttattataa aaagcatctc aaatgcgaaa tccaaaaaaaa 2681  
 aaaaaaaaaa aaaaaaaaaa 2699

<210> 74  
 <211> 496  
 <212> PRT  
 <213> Homo Sapiens

<220>  
 <221> VARIANT  
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 <223> Xaa = Any Amino Acid

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 1 5 10 15  
 Ala Arg Leu Gly Arg Ala Arg Ala Ile Leu Leu Ser Leu Ala Leu Tyr  
 20 25 30  
 Leu Leu Gly Met Leu Ala Phe Pro Leu Leu Ala Ala Pro Ala Thr Arg  
 35 40 45  
 Ala Ala Leu Cys Gly Ser Ala Arg Leu Leu Asn Cys Thr Ala Pro Gly  
 50 55 60  
 Pro Asp Ala Ala Ala Arg Cys Cys Ser Pro Ala Thr Phe Ala Gly Leu  
 65 70 75 80  
 Val Leu Val Gly Leu Gly Val Ala Thr Val Lys Ala Asn Ile Thr Pro  
 85 90 95  
 Phe Gly Ala Asp Gln Val Lys Asp Arg Gly Pro Glu Ala Thr Arg Arg  
 100 105 110  
 Phe Phe Asn Trp Phe Tyr Trp Ser Ile Asn Leu Gly Ala Ile Leu Ser  
 115 120 125  
 Leu Gly Gly Ile Ala Tyr Ile Gln Gln Asn Xaa Ser Phe Val Thr Gly  
 130 135 140  
 Tyr Ala Ile Pro Thr Val Cys Val Gly Leu Ala Phe Val Ala Phe Leu  
 145 150 155 160  
 Cys Gly Gln Ser Val Phe Ile Thr Lys Pro Pro Asp Gly Ser Ala Phe  
 165 170 175

Thr	Asp	Met	Phe	Lys	Ile	Leu	Thr	Tyr	Ser	Cys	Cys	Ser	Gln	Lys	Arg	
			180					185					190			
Ser	Gly	Glu	Arg	Gln	Ser	Asn	Gly	Glu	Gly	Ile	Gly	Val	Phe	Gln	Gln	
		195					200					205				
Ser	Ser	Lys	Gln	Ser	Leu	Phe	Asp	Ser	Cys	Lys	Met	Ser	His	Gly	Gly	
	210					215					220					
Pro	Phe	Thr	Glu	Glu	Lys	Val	Glu	Asp	Val	Lys	Ala	Leu	Val	Lys	Ile	
225					230					235					240	
Val	Pro	Val	Phe	Leu	Ala	Leu	Ile	Pro	Tyr	Trp	Thr	Val	Tyr	Phe	Gln	
			245						250					255		
Met	Gln	Thr	Thr	Tyr	Val	Leu	Gln	Ser	Leu	His	Leu	Arg	Ile	Pro	Glu	
		260						265					270			
Ile	Ser	Asn	Ile	Thr	Thr	Thr	Pro	His	Thr	Leu	Pro	Ala	Ala	Trp	Leu	
		275					280					285				
Thr	Met	Phe	Asp	Ala	Val	Leu	Ile	Leu	Leu	Leu	Ile	Pro	Leu	Lys	Asp	
	290					295					300					
Lys	Leu	Val	Asp	Pro	Ile	Leu	Arg	Arg	His	Gly	Leu	Leu	Pro	Ser	Ser	
305					310					315					320	
Leu	Lys	Arg	Ile	Ala	Val	Gly	Met	Phe	Phe	Val	Met	Cys	Ser	Ala	Phe	
			325						330					335		
Ala	Ala	Gly	Ile	Leu	Glu	Ser	Lys	Arg	Leu	Asn	Leu	Val	Lys	Glu	Lys	
		340						345					350			
Thr	Ile	Asn	Gln	Thr	Ile	Gly	Asn	Val	Val	Tyr	His	Ala	Ala	Asp	Leu	
		355					360					365				
Ser	Leu	Trp	Trp	Gln	Val	Pro	Gln	Tyr	Leu	Leu	Ile	Gly	Ile	Ser	Glu	
	370					375					380					
Ile	Phe	Ala	Ser	Ile	Ala	Gly	Leu	Glu	Phe	Ala	Tyr	Ser	Ala	Ala	Pro	
385					390					395					400	
Lys	Ser	Met	Gln	Ser	Ala	Ile	Met	Gly	Leu	Phe	Phe	Phe	Phe	Ser	Gly	
			405						410					415		
Val	Gly	Ser	Phe	Val	Gly	Ser	Gly	Leu	Leu	Ala	Leu	Val	Ser	Ile	Lys	
		420						425					430			
Ala	Ile	Gly	Trp	Met	Ser	Ser	His	Thr	Asp	Phe	Gly	Asn	Ile	Asn	Gly	
		435					440					445				
Cys	Tyr	Leu	Asn	Tyr	Tyr	Phe	Phe	Leu	Leu	Ala	Ala	Ile	Gln	Gly	Ala	
	450					455					460					
Thr	Leu	Leu	Leu	Phe	Leu	Ile	Ile	Ser	Val	Lys	Tyr	Asp	His	His	Arg	
465					470					475					480	
Asp	His	Gln	Arg	Ser	Arg	Ala	Asn	Gly	Val	Pro	Thr	Ser	Arg	Arg	Ala	
			485						490					495		

<210> 75  
 <211> 1335  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)...(1335)

<400> 75																
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Met	Ile	Glu	Asp	Asn	Lys	Glu	Asn	Lys	Asp	His	Ser	Leu	Glu	Arg	Gly	
1				5					10					15		
aga gcg act ctc att ttt tcc tta aag aat gaa gtt gga gga ctt ata																96
Arg	Ala	Thr	Leu	Ile	Phe	Ser	Leu	Lys	Asn	Glu	Val	Gly	Gly	Leu	Ile	
			20					25					30			
aaa gca ctg aaa atc ttc cag gag aaa cat gtg aac ctg tta cat att																144
Lys	Ala	Leu	Lys	Ile	Phe	Gln	Glu	Lys	His	Val	Asn	Leu	Leu	His	Ile	

35					40					45							
gag	tcc	cga	aaa	tct	aag	aga	aga	aac	tca	gaa	ttt	gag	att	ttt	gtt	192	
Glu	Ser	Arg	Lys	Ser	Lys	Arg	Arg	Asn	Ser	Glu	Phe	Glu	Ile	Phe	Val		
50					55					60							
gac	tgt	gat	acc	aac	aga	gaa	caa	ttg	aat	gat	att	ttt	cat	ctt	ctg	240	
Asp	Cys	Asp	Thr	Asn	Arg	Glu	Gln	Leu	Asn	Asp	Ile	Phe	His	Leu	Leu		
65					70					75					80		
aag	tct	cat	acc	aat	gtt	ctt	tct	gtg	act	cca	cca	gat	aat	ttt	act	288	
Lys	Ser	His	Thr	Asn	Val	Leu	Ser	Val	Thr	Pro	Pro	Asp	Asn	Phe	Thr		
85					90					95							
atg	aag	gaa	gaa	ggc	atg	gag	agt	gtt	cct	tgg	ttt	cca	aag	aaa	att	336	
Met	Lys	Glu	Glu	Gly	Met	Glu	Ser	Val	Pro	Trp	Phe	Pro	Lys	Lys	Ile		
100					105					110							
tca	gac	ctg	gac	cat	tgt	gct	aac	cga	gtt	ctg	atg	tat	gga	tct	gag	384	
Ser	Asp	Leu	Asp	His	Cys	Ala	Asn	Arg	Val	Leu	Met	Tyr	Gly	Ser	Glu		
115					120					125							
cta	gat	gca	gac	cac	cct	ggc	ttc	aaa	gac	aat	gtc	tac	cgt	aaa	aga	432	
Leu	Asp	Ala	Asp	His	Pro	Gly	Phe	Lys	Asp	Asn	Val	Tyr	Arg	Lys	Arg		
130					135					140							
cga	aag	tac	ttt	gca	gac	tcg	gct	atg	agc	tat	aaa	tat	gga	gac	ccc	480	
Arg	Lys	Tyr	Phe	Ala	Asp	Ser	Ala	Met	Ser	Tyr	Lys	Tyr	Gly	Asp	Pro		
145					150					155					160		
att	cct	aag	gtt	gaa	ttc	acg	gaa	gag	gag	att	aag	acc	tgg	gga	acc	528	
Ile	Pro	Lys	Val	Glu	Phe	Thr	Glu	Glu	Glu	Ile	Lys	Thr	Trp	Gly	Thr		
165					170					175							
gta	ttc	cgg	gag	ctc	aac	aaa	ctc	tat	ccg	acc	cat	gct	tgc	aga	gag	576	
Val	Phe	Arg	Glu	Leu	Asn	Lys	Leu	Tyr	Pro	Thr	His	Ala	Cys	Arg	Glu		
180					185					190							
tat	ctc	aaa	aat	tta	cct	ctg	ctt	tcc	aag	tat	tgt	gga	tat	cag	gaa	624	
Tyr	Leu	Lys	Asn	Leu	Pro	Leu	Leu	Ser	Lys	Tyr	Cys	Gly	Tyr	Gln	Glu		
195					200					205							
gac	aat	atc	cca	cag	ctg	gaa	gat	att	tca	aac	ttt	tta	aaa	gag	cgc	672	
Asp	Asn	Ile	Pro	Gln	Leu	Glu	Asp	Ile	Ser	Asn	Phe	Leu	Lys	Glu	Arg		
210					215					220							
aca	ggt	ttt	tcc	att	cgt	cct	gtg	gct	ggt	tac	tta	tca	cca	aga	gat	720	
Thr	Gly	Phe	Ser	Ile	Arg	Pro	Val	Ala	Gly	Tyr	Leu	Ser	Pro	Arg	Asp		
225					230					235					240		
ttc	tta	tca	ggt	tta	gcc	ttt	cga	gtt	ttt	cac	tgc	act	caa	tat	gtg	768	
Phe	Leu	Ser	Gly	Leu	Ala	Phe	Arg	Val	Phe	His	Cys	Thr	Gln	Tyr	Val		
245					250					255							
aga	cac	agt	tca	gac	ccc	ttc	tat	acc	cca	gag	ccg	gat	acc	tgc	cat	816	
Arg	His	Ser	Ser	Asp	Pro	Phe	Tyr	Thr	Pro	Glu	Pro	Asp	Thr	Cys	His		
260					265					270							
gaa	ctc	tta	ggt	cac	gtt	ccc	ctt	ttg	gct	gag	cca	agt	ttt	gct	cag	864	
Glu	Leu	Leu	Gly	His	Val	Pro	Leu	Leu	Ala	Glu	Pro	Ser	Phe	Ala	Gln		
275					280					285							

ttc tcc caa gaa att ggc ctg gct tcc ctt gga gct tca gag gag gct	912
Phe Ser Gln Glu Ile Gly Leu Ala Ser Leu Gly Ala Ser Glu Glu Ala	
290 295 300	
ggt caa aaa ctg gca acg tgc tac ttt ttc act gtg gag ttt ggt cta	960
Val Gln Lys Leu Ala Thr Cys Tyr Phe Phe Thr Val Glu Phe Gly Leu	
305 310 315 320	
tgt aaa caa gac gga cag tta cga gtc ttc ggc gct ggc tta ctt tct	1008
Cys Lys Gln Asp Gly Gln Leu Arg Val Phe Gly Ala Gly Leu Leu Ser	
325 330 335	
tct atc agt gaa ctc aaa cat gtg ctt tct gga cat gcc aaa gta aag	1056
Ser Ile Ser Glu Leu Lys His Val Leu Ser Gly His Ala Lys Val Lys	
340 345 350	
cct ttt gat ccc aag att acc tgc aaa caa gaa tgc ctc atc aca act	1104
Pro Phe Asp Pro Lys Ile Thr Cys Lys Gln Glu Cys Leu Ile Thr Thr	
355 360 365	
ttt cag gat gtc tac ttt gta tct gaa agt ttt gaa gat gca aag gag	1152
Phe Gln Asp Val Tyr Phe Val Ser Glu Ser Phe Glu Asp Ala Lys Glu	
370 375 380	
aag atg aga gaa ttt acc aaa aca att aag cgt ccc ttt gga gtg aaa	1200
Lys Met Arg Glu Phe Thr Lys Thr Ile Lys Arg Pro Phe Gly Val Lys	
385 390 395 400	
tat aat ccc tac aca cga agc att cag atc ctg aaa gac gcc aaa agc	1248
Tyr Asn Pro Tyr Thr Arg Ser Ile Gln Ile Leu Lys Asp Ala Lys Ser	
405 410 415	
ata acg aat gcc atg aac gag ctg cgg cat gat ctt gac gtt gtc agc	1296
Ile Thr Asn Ala Met Asn Glu Leu Arg His Asp Leu Asp Val Val Ser	
420 425 430	
gac gcc ctt ggg aag gtc agc agg aag ccg agt atc taa	1335
Asp Ala Leu Gly Lys Val Ser Arg Lys Pro Ser Ile *	
435 440	

<210> 76

<211> 444

<212> PRT

<213> Homo Sapiens

<400> 76

Met Ile Glu Asp Asn Lys Glu Asn Lys Asp His Ser Leu Glu Arg Gly	
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Arg Ala Thr Leu Ile Phe Ser Leu Lys Asn Glu Val Gly Gly Leu Ile	
20 25 30	
Lys Ala Leu Lys Ile Phe Gln Glu Lys His Val Asn Leu Leu His Ile	
35 40 45	
Glu Ser Arg Lys Ser Lys Arg Arg Asn Ser Glu Phe Glu Ile Phe Val	
50 55 60	
Asp Cys Asp Thr Asn Arg Glu Gln Leu Asn Asp Ile Phe His Leu Leu	
65 70 75 80	
Lys Ser His Thr Asn Val Leu Ser Val Thr Pro Pro Asp Asn Phe Thr	
85 90 95	
Met Lys Glu Glu Gly Met Glu Ser Val Pro Trp Phe Pro Lys Lys Ile	
100 105 110	
Ser Asp Leu Asp His Cys Ala Asn Arg Val Leu Met Tyr Gly Ser Glu	

115	120	125
Leu Asp Ala Asp His Pro Gly Phe Lys Asp Asn Val Tyr Arg Lys Arg		
130	135	140
Arg Lys Tyr Phe Ala Asp Ser Ala Met Ser Tyr Lys Tyr Gly Asp Pro		
145	150	155
Ile Pro Lys Val Glu Phe Thr Glu Glu Glu Ile Lys Thr Trp Gly Thr		
165	170	175
Val Phe Arg Glu Leu Asn Lys Leu Tyr Pro Thr His Ala Cys Arg Glu		
180	185	190
Tyr Leu Lys Asn Leu Pro Leu Leu Ser Lys Tyr Cys Gly Tyr Gln Glu		
195	200	205
Asp Asn Ile Pro Gln Leu Glu Asp Ile Ser Asn Phe Leu Lys Glu Arg		
210	215	220
Thr Gly Phe Ser Ile Arg Pro Val Ala Gly Tyr Leu Ser Pro Arg Asp		
225	230	235
Phe Leu Ser Gly Leu Ala Phe Arg Val Phe His Cys Thr Gln Tyr Val		
245	250	255
Arg His Ser Ser Asp Pro Phe Tyr Thr Pro Glu Pro Asp Thr Cys His		
260	265	270
Glu Leu Leu Gly His Val Pro Leu Leu Ala Glu Pro Ser Phe Ala Gln		
275	280	285
Phe Ser Gln Glu Ile Gly Leu Ala Ser Leu Gly Ala Ser Glu Glu Ala		
290	295	300
Val Gln Lys Leu Ala Thr Cys Tyr Phe Phe Thr Val Glu Phe Gly Leu		
305	310	315
Cys Lys Gln Asp Gly Gln Leu Arg Val Phe Gly Ala Gly Leu Leu Ser		
325	330	335
Ser Ile Ser Glu Leu Lys His Val Leu Ser Gly His Ala Lys Val Lys		
340	345	350
Pro Phe Asp Pro Lys Ile Thr Cys Lys Gln Glu Cys Leu Ile Thr Thr		
355	360	365
Phe Gln Asp Val Tyr Phe Val Ser Glu Ser Phe Glu Asp Ala Lys Glu		
370	375	380
Lys Met Arg Glu Phe Thr Lys Thr Ile Lys Arg Pro Phe Gly Val Lys		
385	390	395
Tyr Asn Pro Tyr Thr Arg Ser Ile Gln Ile Leu Lys Asp Ala Lys Ser		
405	410	415
Ile Thr Asn Ala Met Asn Glu Leu Arg His Asp Leu Asp Val Val Ser		
420	425	430
Asp Ala Leu Gly Lys Val Ser Arg Lys Pro Ser Ile		
435	440	

<210> 77

<211> 2534

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (118)...(1230)

<400> 77

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ccagctccca aggaggttgc agaagtaccg tacagagtgg atttgcaggg cagtggc atg 120  
Met  
1

gag ccc ctc ttc ccc gcg ccg ttc tgg gag gtt atc tac ggc agc cac 168  
Glu Pro Leu Phe Pro Ala Pro Phe Trp Glu Val Ile Tyr Gly Ser His  
5 10 15

ctt cag ggc aac ctg tcc ctc ctg agc ccc aac cac agt ctg ctg ccc	216
Leu Gln Gly Asn Leu Ser Leu Leu Ser Pro Asn His Ser Leu Leu Pro	
20 25 30	
ccg cat ctg ctg ctc aat gcc agc cac ggc gcc ttc ctg ccc ctc ggg	264
Pro His Leu Leu Leu Asn Ala Ser His Gly Ala Phe Leu Pro Leu Gly	
35 40 45	
ctc aag gtc acc atc gtg ggg ctc tac ctg gcc gtg tgt gtc gga ggg	312
Leu Lys Val Thr Ile Val Gly Leu Tyr Leu Ala Val Cys Val Gly Gly	
50 55 60 65	
ctc ctg ggg aac tgc ctt gtc atg tac gtc atc ctc agg cac acc aaa	360
Leu Leu Gly Asn Cys Leu Val Met Tyr Val Ile Leu Arg His Thr Lys	
70 75 80	
atg aag aca gcc acc aat att tac atc ttt aac ctg gcc ctg gcc gac	408
Met Lys Thr Ala Thr Asn Ile Tyr Ile Phe Asn Leu Ala Leu Ala Asp	
85 90 95	
act ctg gtc ctg ctg acg ctg ccc ttc cag ggc acg gac atc ctc ctg	456
Thr Leu Val Leu Leu Thr Leu Pro Phe Gln Gly Thr Asp Ile Leu Leu	
100 105 110	
ggc ttc tgg ccg ttt ggg aat gcg ctg tgc aag aca gtc att gcc att	504
Gly Phe Trp Pro Phe Gly Asn Ala Leu Cys Lys Thr Val Ile Ala Ile	
115 120 125	
gac tac tac aac atg ttc acc agc acc ttc acc cta act gcc atg agt	552
Asp Tyr Tyr Asn Met Phe Thr Ser Thr Phe Thr Leu Thr Ala Met Ser	
130 135 140 145	
gtg gat cgc tat gta gcc atc tgc cac ccc atc cgt gcc ctc gac gtc	600
Val Asp Arg Tyr Val Ala Ile Cys His Pro Ile Arg Ala Leu Asp Val	
150 155 160	
cgc acg tcc agc aaa gcc cag gct gtc aat gtg gcc atc tgg gcc ctg	648
Arg Thr Ser Ser Lys Ala Gln Ala Val Asn Val Ala Ile Trp Ala Leu	
165 170 175	
gcc tct gtt gtc ggt gtt ccc gtt gcc atc atg ggc tcg gca cag gtc	696
Ala Ser Val Val Gly Val Pro Val Ala Ile Met Gly Ser Ala Gln Val	
180 185 190	
gag gat gaa gag atc gag tgc ctg gtg gag atc cct acc cct cag gat	744
Glu Asp Glu Glu Ile Glu Cys Leu Val Glu Ile Pro Thr Pro Gln Asp	
195 200 205	
tac tgg ggc ccg gtg ttt gcc atc tgc atc ttc ctc ttc tcc ttc atc	792
Tyr Trp Gly Pro Val Phe Ala Ile Cys Ile Phe Leu Phe Ser Phe Ile	
210 215 220 225	
gtc ccc gtg ctc gtc atc tct gtc tgc tac agc ctc atg atc cgg cgg	840
Val Pro Val Leu Val Ile Ser Val Cys Tyr Ser Leu Met Ile Arg Arg	
230 235 240	
ctc cgt gga gtc cgc ctg ctc tcg ggc tcc cga gag aag gac cgg aac	888
Leu Arg Gly Val Arg Leu Leu Ser Gly Ser Arg Glu Lys Asp Arg Asn	
245 250 255	
ctg cgg cgc atc act cgg ctg gtg ctg gtg gta gtg gct gtg ttc gtg	936
Leu Arg Arg Ile Thr Arg Leu Val Leu Val Val Val Ala Val Phe Val	

260	265	270	
ggc tgc tgg acg cct gtc cag gtc ttc gtg ctg gcc caa ggg ctg ggg			984
Gly Cys Trp Thr Pro Val Gln Val Phe Val Leu Ala Gln Gly Leu Gly			
275	280	285	
ggt cag ccg agc agc gag act gcc gtg gcc att ctg cgc ttc tgc acg			1032
Val Gln Pro Ser Ser Glu Thr Ala Val Ala Ile Leu Arg Phe Cys Thr			
290	295	300	305
gcc ctg ggc tac gtc aac agc tgc ctc aac ccc atc ctc tac gcc ttc			1080
Ala Leu Gly Tyr Val Asn Ser Cys Leu Asn Pro Ile Leu Tyr Ala Phe			
	310	315	320
ctg gat gag aac ttc aag gcc tgc ttc cgc aag ttc tgc tgt gca tct			1128
Leu Asp Glu Asn Phe Lys Ala Cys Phe Arg Lys Phe Cys Cys Ala Ser			
	325	330	335
gcc ctg cgc cgg gac gtg cag gtg tct gac cgc gtg cgc agc att gcc			1176
Ala Leu Arg Arg Asp Val Gln Val Ser Asp Arg Val Arg Ser Ile Ala			
	340	345	350
aag gac gtg gcc ctg gcc tgc aag acc tct gag acg gta ccg cgg ccc			1224
Lys Asp Val Ala Leu Ala Cys Lys Thr Ser Glu Thr Val Pro Arg Pro			
	355	360	365
gca tga ctaggcgtgg acctgcccac ggtgcctgtc agcccgacaga gcccacctac			1280
Ala *			
370			

gcccacacac	gagctcacac	aggctactgc	tctctaggcg	gacacaccct	gggccctgag	1340
catccagagc	ctgggatggg	cttttccctg	tgggccaggg	atgctcggtc	ccagaggagg	1400
acctagtgac	atcatgggac	aggtaaagc	attaggggcca	cctccatggc	cccagacaga	1460
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agcagcagct	gtgtcctcct	gtgcccccca	tgtgctgtgt	gctgttttga	tggcagggct	1700
ccagctgcct	tcagccctgt	gacgtctcct	cagggcagct	ggacaggctt	ggcacggccc	1760
gggaagtga	gcaggcagct	tttctttggg	gtgggacttg	ccctgagctt	ggagctgcca	1820
cctggaggac	ttgcctgttc	cgactccacc	tgtgcagccg	gggccacccc	aggagaaagt	1880
gtccaggttg	gggctggcag	tccctggctg	cagaccccga	gctggccctc	ggaccgcacc	1940
tctgaaggtt	ttctgtgtgc	tgcacgggtg	aggcctcatc	cctgactgca	gcttgactct	2000
gggcccacac	cccatttccc	ttcaggagac	cagcgagagg	ccctggccat	ccctccagcg	2060
gtgcaatgaa	ctatatgctg	tggaccgtca	acccagccct	gcttctcagt	gtggggcagg	2120
tgtctcagga	cgaaggcgcc	gcgtgaccac	atgggcagct	ctgttcacaa	agtggaggcc	2180
tcgttttccct	ggtcttgact	gctctgtttg	ggtgggagaa	gattctcttg	gggtccccac	2240
atcctcccaa	ggctccccctc	acagcctctc	ctttgcttga	agccagaggt	cagtggccgt	2300
gctgtgttgc	ggggaagctg	tgtggaagga	gaagctgggtg	gccacagcag	agtcctgtctc	2360
tggggacgcc	tgtttcattt	acaagcctca	agatggctct	gtgtagggcc	tgagcttgct	2420
gcccacggg	aggatggctt	cacagcagag	ccagcatgag	gggtggggcc	tggcagggct	2480
tgcttgagcc	aaactgcaaa	ggctgtggtg	gctgtgagga	cactgcgggg	gttg	2534

<210> 78

<211> 370

<212> PRT

<213> Homo Sapiens

<400> 78

Met	Glu	Pro	Leu	Phe	Pro	Ala	Pro	Phe	Trp	Glu	Val	Ile	Tyr	Gly	Ser
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His	Leu	Gln	Gly	Asn	Leu	Ser	Leu	Leu	Ser	Pro	Asn	His	Ser	Leu	Leu
		20					25					30			

Pro	Pro	His	Leu	Leu	Leu	Asn	Ala	Ser	His	Gly	Ala	Phe	Leu	Pro	Leu
		35					40					45			
Gly	Leu	Lys	Val	Thr	Ile	Val	Gly	Leu	Tyr	Leu	Ala	Val	Cys	Val	Gly
	50					55					60				
Gly	Leu	Leu	Gly	Asn	Cys	Leu	Val	Met	Tyr	Val	Ile	Leu	Arg	His	Thr
65				70						75				80	
Lys	Met	Lys	Thr	Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu	Ala
			85					90					95		
Asp	Thr	Leu	Val	Leu	Leu	Thr	Leu	Pro	Phe	Gln	Gly	Thr	Asp	Ile	Leu
		100						105					110		
Leu	Gly	Phe	Trp	Pro	Phe	Gly	Asn	Ala	Leu	Cys	Lys	Thr	Val	Ile	Ala
	115						120					125			
Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Thr	Phe	Thr	Leu	Thr	Ala	Met
	130					135					140				
Ser	Val	Asp	Arg	Tyr	Val	Ala	Ile	Cys	His	Pro	Ile	Arg	Ala	Leu	Asp
145					150					155				160	
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1490 1495 1500 1505

aag gat tac att cta gag cta aaa gtg aag gaa acg tct caa gtg act 4738
Lys Asp Tyr Ile Leu Glu Leu Lys Val Lys Glu Thr Ser Gln Val Thr
1510 1515 1520

ttg gtc cac act gag att ctg aag ctt ttc cca cag gct gca ggg cag 4786
Leu Val His Thr Glu Ile Leu Lys Leu Phe Pro Gln Ala Ala Gly Gln
1525 1530 1535

gaa agg tat tcc tct ttg tta acc tat aag ctg ccc gtg gca gac gtt 4834
Glu Arg Tyr Ser Ser Leu Leu Thr Tyr Lys Leu Pro Val Ala Asp Val
1540 1545 1550

tac cct cta tca cag acc ttt cac aaa tta gaa gca gtg aag cat aac 4882
Tyr Pro Leu Ser Gln Thr Phe His Lys Leu Glu Ala Val Lys His Asn
1555 1560 1565

ttt aac ctg gaa gaa tac agc ctt tct cag tgc aca ctg gag aag gta 4930
Phe Asn Leu Glu Glu Tyr Ser Leu Ser Gln Cys Thr Leu Glu Lys Val
1570 1575 1580 1585

ttc tta gag ctt tct aaa gaa cag gaa gta gga aat ttt gat gaa gaa 4978
Phe Leu Glu Leu Ser Lys Glu Gln Glu Val Gly Asn Phe Asp Glu Glu
1590 1595 1600

att gat aca aca atg aga tgg aaa ctc ctc cct cat tca gat gaa cct 5026
Ile Asp Thr Thr Met Arg Trp Lys Leu Leu Pro His Ser Asp Glu Pro
1605 1610 1615

taa aacctcaaac ctagtaattt tttgttgatc tcctataaac ttatgtttta 5079
*
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tgtaataatt aatagtatgt ttaattttta agatcattta aaattaacat caggatatatt 5139
ttgtaaattt agttaacaaa tacataaatt ttaaaattat tcttcctctc aaacataggg 5199
gtgatagcaa acctgtgata aaggcaatac aaaatattag taaagtcacc caaagagtca 5259
ggcactgggt attgtggaaa taaaactata taaactt 5296
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<210> 80
<211> 1617
<212> PRT
<213> Homo Sapiens
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Cys Lys Asn Phe Leu Lys Lys Trp Arg Met Lys Arg Glu Ser Leu Leu
20 25 30
Glu Trp Gly Leu Ser Ile Leu Leu Gly Leu Cys Ile Ala Leu Phe Ser
35 40 45
Ser Ser Met Arg Asn Val Gln Phe Pro Gly Met Ala Pro Gln Asn Leu
50 55 60
Gly Arg Val Asp Lys Phe Asn Ser Ser Ser Leu Met Val Val Tyr Thr
65 70 75 80
Pro Ile Ser Asn Leu Thr Gln Gln Ile Met Asn Lys Thr Ala Leu Ala
85 90 95
Pro Leu Leu Lys Gly Thr Ser Val Ile Gly Ala Pro Asn Lys Thr His
100 105 110
Met Asp Glu Ile Leu Leu Glu Asn Leu Pro Tyr Ala Met Gly Ile Ile
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		115					120					125				
Phe	Asn	Glu	Thr	Phe	Ser	Tyr	Lys	Leu	Ile	Phe	Phe	Gln	Gly	Tyr	Asn	
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Ser	Pro	Leu	Trp	Lys	Glu	Asp	Phe	Ser	Ala	His	Cys	Trp	Asp	Gly	Tyr	
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Gly	Glu	Phe	Ser	Cys	Thr	Leu	Thr	Lys	Tyr	Trp	Asn	Arg	Gly	Phe	Val	
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Ala	Leu	Gln	Thr	Ala	Ile	Asn	Thr	Ala	Ile	Ile	Glu	Ile	Thr	Thr	Asn	
			180					185					190			
His	Pro	Val	Met	Glu	Glu	Leu	Met	Ser	Val	Thr	Ala	Ile	Thr	Met	Lys	
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Thr	Leu	Pro	Phe	Ile	Thr	Lys	Asn	Leu	Leu	His	Asn	Glu	Met	Phe	Ile	
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Leu	Phe	Phe	Leu	Leu	His	Phe	Ser	Pro	Leu	Val	Tyr	Phe	Ile	Ser	Leu	
225					230					235					240	
Asn	Val	Thr	Lys	Glu	Arg	Lys	Lys	Ser	Lys	Asn	Leu	Met	Lys	Met	Met	
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Gly	Leu	Gln	Asp	Ser	Ala	Phe	Trp	Leu	Ser	Trp	Gly	Leu	Ile	Tyr	Ala	
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Gly	Phe	Ile	Phe	Ile	Ile	Ser	Ile	Phe	Ile	Thr	Ile	Ile	Ile	Thr	Phe	
		275					280					285				
Thr	Gln	Ile	Ile	Val	Met	Thr	Gly	Phe	Met	Val	Ile	Phe	Ile	Leu	Phe	
	290					295					300					
Phe	Leu	Tyr	Gly	Leu	Ser	Leu	Val	Ala	Leu	Val	Phe	Leu	Met	Ser	Val	
305					310					315					320	
Leu	Leu	Lys	Lys	Ala	Val	Leu	Thr	Asn	Leu	Val	Val	Phe	Leu	Leu	Thr	
				325					330					335		
Leu	Phe	Trp	Gly	Cys	Leu	Gly	Phe	Thr	Val	Phe	Tyr	Glu	Gln	Leu	Pro	
			340					345					350			
Ser	Ser	Leu	Glu	Trp	Ile	Leu	Asn	Ile	Cys	Ser	Pro	Phe	Ala	Phe	Thr	
		355					360					365				
Thr	Gly	Met	Ile	Gln	Ile	Ile	Lys	Leu	Asp	Tyr	Asn	Leu	Asn	Gly	Val	
	370					375					380					
Ile	Phe	Pro	Asp	Pro	Ser	Gly	Asp	Ser	Tyr	Thr	Met	Ile	Ala	Thr	Phe	
385					390					395					400	
Ser	Met	Leu	Leu	Leu	Asp	Gly	Leu	Ile	Tyr	Leu	Leu	Leu	Ala	Leu	Tyr	
				405					410					415		
Phe	Asp	Lys	Ile	Leu	Pro	Tyr	Gly	Asp	Glu	Arg	His	Tyr	Ser	Pro	Leu	
			420					425					430			
Phe	Phe	Leu	Asn	Ser	Ser	Ser	Cys	Phe	Gln	His	Gln	Arg	Thr	Asn	Ala	
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Lys	Val	Ile	Glu	Lys	Glu	Ile	Asp	Ala	Glu	His	Pro	Ser	Asp	Asp	Tyr	
	450					455					460					
Phe	Glu	Pro	Val	Ala	Pro	Glu	Phe	Gln	Gly	Lys	Glu	Ala	Ile	Arg	Ile	
465					470					475</						



610	615	620
Phe Gly Ile Thr Ile Leu	Gly Asp Pro Gln Ile Leu	Leu Leu Asp Glu
625	630	635
Pro Thr Thr Gly Leu	Asp Pro Phe Ser Arg Asp	Gln Val Trp Ser Leu
645	650	655
Leu Arg Glu Arg Arg Ala	Asp His Val Ile Leu	Phe Ser Thr Gln Ser
660	665	670
Met Asp Glu Ala Asp Ile	Leu Ala Asp Arg Lys	Val Ile Met Ser Asn
675	680	685
Gly Arg Leu Lys Cys Ala	Gly Ser Ser Met Phe	Leu Lys Arg Arg Trp
690	695	700
Gly Leu Gly Tyr His Leu	Ser Leu His Arg Asn	Glu Ile Cys Asn Pro
705	710	715
Glu Gln Ile Thr Ser Phe	Ile Thr His His Ile	Pro Asp Ala Lys Leu
725	730	735
Lys Thr Glu Asn Lys Glu	Lys Leu Val Tyr Thr	Leu Pro Leu Glu Arg
740	745	750
Thr Asn Thr Phe Pro Asp	Leu Phe Ser Asp Leu	Asp Lys Cys Ser Asp
755	760	765
Gln Gly Val Thr Gly Tyr	Asp Ile Ser Met Ser	Thr Leu Asn Glu Val
770	775	780
Phe Met Lys Leu Glu Gly	Gln Ser Thr Ile Glu	Gln Asp Phe Glu Gln
785	790	795
Val Glu Met Ile Arg Asp	Ser Glu Ser Leu Asn	Glu Met Glu Leu Ala
805	810	815
His Ser Ser Phe Ser Glu	Met Gln Thr Ala Val	Ser Asp Met Gly Leu
820	825	830
Trp Arg Met Gln Val Phe	Ala Met Ala Arg Leu	Arg Phe Leu Lys Leu
835	840	845
Lys Arg Gln Thr Lys Val	Leu Thr Leu Leu Val	Phe Gly Ile
850	855	860
Ala Ile Phe Pro Leu Ile	Val Glu Asn Ile Ile	Tyr Ala Met Leu Asn
865	870	875
Glu Lys Ile Asp Trp Glu	Phe Lys Asn Glu Leu	Tyr Phe Leu Ser Pro
885	890	895
Gly Gln Leu Pro Gln Glu	Pro Arg Thr Ser Leu	Leu Ile Ile Asn Asn
900	905	910
Thr Glu Ser Asn Ile Glu	Asp Phe Ile Lys Ser	Leu Lys His Gln Asn
915	920	925
Ile Leu Leu Glu Val Asp	Asp Phe Glu Asn Arg	Asn Gly Thr Asp Gly
930	935	940
Leu Ser Tyr Asn Gly Ala	Ile Ile Val Ser Gly	Lys Gln Lys Asp Tyr
945	950	955
Arg Phe Ser Val Val Cys	Asn Thr Lys Arg Leu	His Cys Phe Pro Ile
965	970	975
Leu Met Asn Ile Ile Ser	Asn Gly Leu Leu Gln	Met Phe Asn His Thr
980	985	990
Gln His Ile Arg Ile Glu	Ser Ser Pro Phe Pro	Leu Ser His Ile Gly
995	1000	1005
Leu Trp Thr Gly Leu Pro	Asp Gly Ser Phe Phe	Leu Phe Leu Val Leu
1010	1015	1020
Cys Ser Ile Ser Pro Tyr	Ile Thr Met Gly Ser	Ile Ser Asp Tyr Lys
1025	1030	1035
Lys Asn Ala Lys Ser Gln	Leu Trp Ile Ser Gly	Leu Tyr Thr Ser Ala
1045	1050	1055
Tyr Trp Cys Gly Gln Ala	Leu Val Asp Val Ser	Phe Phe Ile Leu Ile
1060	1065	1070
Leu Leu Leu Met Tyr Leu	Ile Phe Tyr Ile Glu	Asn Met Gln Tyr Leu
1075	1080	1085
Leu Ile Thr Ser Gln Ile	Val Phe Ala Leu Val	Ile Val Thr Pro Gly
1090	1095	1100
Tyr Ala Ala Ser Leu Val	Phe Phe Ile Tyr Met	Ile Ser Phe Ile Phe

1105		1110		1115		1120
Arg Lys Arg Arg Lys Asn Ser Gly Leu Trp Ser Phe Tyr Phe Phe Phe						
	1125		1130			1135
Ala Ser Thr Ile Met Phe Ser Ile Thr Leu Ile Asn His Phe Asp Leu						
	1140		1145			1150
Ser Ile Leu Ile Thr Thr Met Val Leu Val Pro Ser Tyr Thr Leu Leu						
	1155		1160			1165
Gly Phe Lys Thr Phe Leu Glu Val Arg Asp Gln Glu His Tyr Arg Glu						
	1170		1175			1180
Phe Pro Glu Ala Asn Phe Glu Leu Ser Ala Thr Asp Phe Leu Val Cys						
1185		1190		1195		1200
Phe Ile Pro Tyr Phe Gln Thr Leu Leu Phe Val Phe Val Leu Arg Cys						
	1205		1210			1215
Met Glu Leu Lys Cys Gly Lys Lys Arg Met Arg Lys Asp Pro Val Phe						
	1220		1225			1230
Arg Ile Ser Pro Gln Ser Arg Asp Ala Lys Pro Asn Pro Glu Glu Pro						
	1235		1240			1245
Ile Asp Glu Asp Glu Asp Ile Gln Thr Glu Arg Ile Arg Thr Ala Thr						
	1250		1255			1260
Ala Leu Thr Thr Ser Ile Leu Asp Glu Lys Pro Val Ile Ile Ala Ser						
1265		1270		1275		1280
Cys Leu His Lys Glu Tyr Ala Gly Gln Lys Lys Ser Cys Phe Ser Lys						
	1285		1290			1295
Arg Lys Lys Lys Ile Ala Ala Arg Asn Ile Ser Phe Cys Val Gln Glu						
	1300		1305			1310
Gly Glu Ile Leu Gly Leu Leu Gly Pro Ser Gly Ala Gly Lys Ser Ser						
	1315		1320			1325
Ser Ile Arg Met Ile Ser Gly Ile Thr Lys Pro Thr Ala Gly Glu Val						
	1330		1335			1340
Glu Leu Lys Gly Cys Ser Ser Val Leu Gly His Leu Gly Tyr Cys Pro						
1345		1350		1355		1360
Gln Glu Asn Val Leu Trp Pro Met Leu Thr Leu Arg Glu His Leu Glu						
	1365		1370			1375
Val Tyr Ala Ala Val Lys Gly Leu Arg Lys Ala Asp Ala Arg Leu Ala						
	1380		1385			1390
Ile Ala Arg Leu Val Ser Ala Phe Lys Leu His Glu Gln Leu Asn Val						
	1395		1400			1405
Pro Val Gln Lys Leu Thr Ala Gly Ile Thr Arg Lys Leu Cys Phe Val						
	1410		1415			1420
Leu Ser Leu Leu Gly Asn Ser Pro Val Leu Leu Leu Asp Glu Pro Ser						
1425		1430		1435		1440
Thr Gly Ile Asp Pro Thr Gly Gln Gln Gln Met Trp Gln Ala Ile Gln						
	1445		1450			1455
Ala Val Val Lys Asn Thr Glu Arg Gly Val Leu Leu Thr Thr His Asn						
	1460		1465			1470
Leu Ala Glu Ala Glu Ala Leu Cys Asp Arg Val Ala Ile Met Val Ser						
	1475		1480			1485
Gly Arg Leu Arg Cys Ile Gly Ser Ile Gln His Leu Lys Asn Lys Leu						
	1490		1495			1500
Gly Lys Asp Tyr Ile Leu Glu Leu Lys Val Lys Glu Thr Ser Gln Val						
1505		1510		1515		1520
Thr Leu Val His Thr Glu Ile Leu Lys Leu Phe Pro Gln Ala Ala Gly						
	1525		1530			1535
Gln Glu Arg Tyr Ser Ser Leu Leu Thr Tyr Lys Leu Pro Val Ala Asp						
	1540		1545			1550
Val Tyr Pro Leu Ser Gln Thr Phe His Lys Leu Glu Ala Val Lys His						
	1555		1560			1565
Asn Phe Asn Leu Glu Glu Tyr Ser Leu Ser Gln Cys Thr Leu Glu Lys						
	1570		1575			1580
Val Phe Leu Glu Leu Ser Lys Glu Gln Glu Val Gly Asn Phe Asp Glu						
1585		1590		1595		1600
Glu Ile Asp Thr Thr Met Arg Trp Lys Leu Leu Pro His Ser Asp Glu						

Pro

1605 1610 1615

<210> 81  
 <211> 1928  
 <212> DNA  
 <213> Homo Sapiens

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 <221> CDS  
 <222> (167)...(1585)

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 caccgtaagg ctaggccgcg agcttagtcc tgggagccgc ctccgtcgcc gccgtcagag 120  
 ccgcctatc agattatctt aacaagaaaa ccaactggaa aaaaaa atg aaa ttc 175  
 Met Lys Phe  
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ctt atc ttc gca ttt ttc ggt ggt gtt cac ctt tta tcc ctg tgc tct 223  
 Leu Ile Phe Ala Phe Phe Gly Gly Val His Leu Leu Ser Leu Cys Ser  
 5 10 15

ggg aaa gct ata tgc aag aat ggc atc tct aag agg act ttt gaa gaa 271  
 Gly Lys Ala Ile Cys Lys Asn Gly Ile Ser Lys Arg Thr Phe Glu Glu  
 20 25 30 35

ata aaa gaa gaa ata gcc agc tgt gga gat gtt gct aaa gca atc atc 319  
 Ile Lys Glu Glu Ile Ala Ser Cys Gly Asp Val Ala Lys Ala Ile Ile  
 40 45 50

aac cta gct gtt tat ggt aaa gcc cag aac aga tcc tat gag cga ttg 367  
 Asn Leu Ala Val Tyr Gly Lys Ala Gln Asn Arg Ser Tyr Glu Arg Leu  
 55 60 65

gca ctt ctg gtt gat act gtt gga ccc aga ctg agt ggc tcc aag aac 415  
 Ala Leu Leu Val Asp Thr Val Gly Pro Arg Leu Ser Gly Ser Lys Asn  
 70 75 80

cta gaa aaa gcc atc caa att atg tac caa aac ctg cag caa gat ggg 463  
 Leu Glu Lys Ala Ile Gln Ile Met Tyr Gln Asn Leu Gln Gln Asp Gly  
 85 90 95

ctg gag aaa gtt cac ctg gag cca gtg aga ata ccc cac tgg gag agg 511  
 Leu Glu Lys Val His Leu Glu Pro Val Arg Ile Pro His Trp Glu Arg  
 100 105 110 115

gga gaa gaa tca gct gtg atg ctg gag cca aga att cat aag ata gcc 559  
 Gly Glu Glu Ser Ala Val Met Leu Glu Pro Arg Ile His Lys Ile Ala  
 120 125 130

atc ctg ggt ctt ggc agc agc att ggg act cct cca gaa ggc att aca 607  
 Ile Leu Gly Leu Gly Ser Ser Ile Gly Thr Pro Pro Glu Gly Ile Thr  
 135 140 145

gca gaa gtt ctg gtg gtg acc tct ttc gat gaa ctg cag aga agg gcc 655  
 Ala Glu Val Leu Val Val Thr Ser Phe Asp Glu Leu Gln Arg Arg Ala  
 150 155 160

tca gaa gca aga ggg aag att gtt gtt tat aac caa cct tac atc aac 703

Ser	Glu	Ala	Arg	Gly	Lys	Ile	Val	Val	Tyr	Asn	Gln	Pro	Tyr	Ile	Asn	
165						170					175					
tac	tca	agg	acg	gtg	caa	tac	cga	acg	cag	ggg	gcg	gtg	gaa	gct	gcc	751
Tyr	Ser	Arg	Thr	Val	Gln	Tyr	Arg	Thr	Gln	Gly	Ala	Val	Glu	Ala	Ala	
180					185					190					195	
aag	gtt	ggg	gct	ttg	gca	tct	ctc	att	cga	tcc	gtg	gcc	tcc	ttc	tcc	799
Lys	Val	Gly	Ala	Leu	Ala	Ser	Leu	Ile	Arg	Ser	Val	Ala	Ser	Phe	Ser	
				200					205					210		
atc	tac	agt	cct	cac	aca	ggg	att	cag	gaa	tac	cag	gat	ggc	gtg	ccc	847
Ile	Tyr	Ser	Pro	His	Thr	Gly	Ile	Gln	Glu	Tyr	Gln	Asp	Gly	Val	Pro	
			215					220					225			
aag	att	cca	aca	gcc	tgt	att	acg	gtg	gaa	gat	gca	gaa	atg	atg	tca	895
Lys	Ile	Pro	Thr	Ala	Cys	Ile	Thr	Val	Glu	Asp	Ala	Glu	Met	Met	Ser	
		230					235					240				
aga	atg	gct	tct	cat	ggg	atc	aaa	att	gtc	att	cag	cta	aag	atg	ggg	943
Arg	Met	Ala	Ser	His	Gly	Ile	Lys	Ile	Val	Ile	Gln	Leu	Lys	Met	Gly	
	245					250					255					
gca	aag	acc	tac	cca	gat	act	gat	tcc	ttc	aac	act	gta	gca	gag	atc	991
Ala	Lys	Thr	Tyr	Pro	Asp	Thr	Asp	Ser	Phe	Asn	Thr	Val	Ala	Glu	Ile	
260					265					270					275	
act	ggg	agc	aaa	tat	cca	gaa	cag	gtt	gta	ctg	gtc	agt	gga	cat	ctg	1039
Thr	Gly	Ser	Lys	Tyr	Pro	Glu	Gln	Val	Val	Leu	Val	Ser	Gly	His	Leu	
				280				285						290		
gac	agc	tgg	gat	gtt	ggg	cag	ggg	gcc	atg	gat	gat	ggc	ggg	gga	gcc	1087
Asp	Ser	Trp	Asp	Val	Gly	Gln	Gly	Ala	Met	Asp	Asp	Gly	Gly	Gly	Ala	
			295					300					305			
ttt	ata	tca	tgg	gaa	gca	ctc	tca	ctt	att	aaa	gat	ctt	ggg	ctg	cgt	1135
Phe	Ile	Ser	Trp	Glu	Ala	Leu	Ser	Leu	Ile	Lys	Asp	Leu	Gly	Leu	Arg	
		310					315					320				
cca	aag	agg	act	ctg	cgg	ctg	gtg	ctc	tgg	act	gca	gaa	gaa	caa	ggg	1183
Pro	Lys	Arg	Thr	Leu	Arg	Leu	Val	Leu	Trp	Thr	Ala	Glu	Glu	Gln	Gly	
	325					330					335					
gga	gtt	ggg	gcc	ttc	cag	tat	tat	cag	tta	cac	aag	gta	aat	att	tcc	1231
Gly	Val	Gly	Ala	Phe	Gln	Tyr	Tyr	Gln	Leu	His	Lys	Val	Asn	Ile	Ser	
340					345				350						355	
aac	tac	agt	ctg	gtg	atg	gag	tct	gac	gca	gga	acc	ttc	tta	ccc	act	1279
Asn	Tyr	Ser	Leu	Val	Met	Glu	Ser	Asp	Ala	Gly	Thr	Phe	Leu	Pro	Thr	
				360				365						370		
ggg	ctg	caa	ttc	act	ggc	agt	gaa	aag	gcc	agg	gcc	atc	atg	gag	gag	1327
Gly	Leu	Gln	Phe	Thr	Gly	Ser	Glu	Lys	Ala	Arg	Ala	Ile	Met	Glu	Glu	
			375					380					385			
gtt	atg	agc	ctg	ctg	cag	ccc	ctc	aat	atc	act	cag	gtc	ctg	agc	cat	1375
Val	Met	Ser	Leu	Leu	Gln	Pro	Leu	Asn	Ile	Thr	Gln	Val	Leu	Ser	His	
			390				395					400				
gga	gaa	ggg	aca	gac	atc	aac	ttt	tgg	atc	caa	gct	gga	gtg	cct	gga	1423
Gly	Glu	Gly	Thr	Asp	Ile	Asn	Phe	Trp	Ile	Gln	Ala	Gly	Val	Pro	Gly	
	405					410					415					

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gcc agt cta ctt gat gac tta tac aag tat ttc ttc ttc cat cac tcc 1471
Ala Ser Leu Leu Asp Asp Leu Tyr Lys Tyr Phe Phe Phe His His Ser
420 425 430 435

cac gga gac acc atg act gtc atg gat cca aag cag atg aat gtt gct 1519
His Gly Asp Thr Met Thr Val Met Asp Pro Lys Gln Met Asn Val Ala
440 445 450

gct gct gtt tgg gct gtt gtt tct tat gtt gtt gca gac atg gaa gaa 1567
Ala Ala Val Trp Ala Val Val Ser Tyr Val Val Ala Asp Met Glu Glu
455 460 465

atg ctg cct agg tcc tag aaacagtaag aaagaaacgt tttcatgctt 1615
Met Leu Pro Arg Ser *
470

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ctggccagga atcctggggtc tgcaactttg gaaaactcct cttcacataa caattttcatc 1675
caatttcattc tcaaagcaca actctatttc atgctttctg ttattatctt tcttgatact 1735
ttccaaattc tctgattcta gaaaaaggaa tcattctccc ctccctccca ccacatagaa 1795
tcaacatatg gtagggatta cagtgggggc atttctttat atcacctctt aaaaacattg 1855
tttccacttt aaagtaaac acttaataaa tttttggaag aacaaaaaaa aaaaaaaaaa 1915
aaaaaaaaaa aaa 1928

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<210> 82
<211> 472
<212> PRT
<213> Homo Sapiens

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Phe Glu Glu Ile Lys Glu Glu Ile Ala Ser Cys Gly Asp Val Ala Lys
35 40 45
Ala Ile Ile Asn Leu Ala Val Tyr Gly Lys Ala Gln Asn Arg Ser Tyr
50 55 60
Glu Arg Leu Ala Leu Leu Val Asp Thr Val Gly Pro Arg Leu Ser Gly
65 70 75 80
Ser Lys Asn Leu Glu Lys Ala Ile Gln Ile Met Tyr Gln Asn Leu Gln
85 90 95
Gln Asp Gly Leu Glu Lys Val His Leu Glu Pro Val Arg Ile Pro His
100 105 110
Trp Glu Arg Gly Glu Glu Ser Ala Val Met Leu Glu Pro Arg Ile His
115 120 125
Lys Ile Ala Ile Leu Gly Leu Gly Ser Ser Ile Gly Thr Pro Pro Glu
130 135 140
Gly Ile Thr Ala Glu Val Leu Val Val Thr Ser Phe Asp Glu Leu Gln
145 150 155 160
Arg Arg Ala Ser Glu Ala Arg Gly Lys Ile Val Val Tyr Asn Gln Pro
165 170 175
Tyr Ile Asn Tyr Ser Arg Thr Val Gln Tyr Arg Thr Gln Gly Ala Val
180 185 190
Glu Ala Ala Lys Val Gly Ala Leu Ala Ser Leu Ile Arg Ser Val Ala
195 200 205
Ser Phe Ser Ile Tyr Ser Pro His Thr Gly Ile Gln Glu Tyr Gln Asp
210 215 220
Gly Val Pro Lys Ile Pro Thr Ala Cys Ile Thr Val Glu Asp Ala Glu
225 230 235 240
Met Met Ser Arg Met Ala Ser His Gly Ile Lys Ile Val Ile Gln Leu
245 250 255

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Lys	Met	Gly	Ala	Lys	Thr	Tyr	Pro	Asp	Thr	Asp	Ser	Phe	Asn	Thr	Val	
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Ala	Glu	Ile	Thr	Gly	Ser	Lys	Tyr	Pro	Glu	Gln	Val	Val	Leu	Val	Ser	
		275					280					285				
Gly	His	Leu	Asp	Ser	Trp	Asp	Val	Gly	Gln	Gly	Ala	Met	Asp	Asp	Gly	
	290					295					300					
Gly	Gly	Ala	Phe	Ile	Ser	Trp	Glu	Ala	Leu	Ser	Leu	Ile	Lys	Asp	Leu	
305					310					315					320	
Gly	Leu	Arg	Pro	Lys	Arg	Thr	Leu	Arg	Leu	Val	Leu	Trp	Thr	Ala	Glu	
			325						330					335		
Glu	Gln	Gly	Gly	Val	Gly	Ala	Phe	Gln	Tyr	Tyr	Gln	Leu	His	Lys	Val	
		340						345					350			
Asn	Ile	Ser	Asn	Tyr	Ser	Leu	Val	Met	Glu	Ser	Asp	Ala	Gly	Thr	Phe	
	355						360					365				
Leu	Pro	Thr	Gly	Leu	Gln	Phe	Thr	Gly	Ser	Glu	Lys	Ala	Arg	Ala	Ile	
	370					375					380					
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His	His	Ser	His	Gly	Asp	Thr	Met	Thr	Val	Met	Asp	Pro	Lys	Gln	Met	
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Asn	Val	Ala	Ala	Ala	Val	Trp	Ala	Val	Val	Ser	Tyr	Val	Val	Ala	Asp	
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Met	Asn	Phe	Ala	Glu	Arg
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gag	ggc	tct	aag	aga	tac	tgc	att	caa	acg	aaa	cat	gtg	gcc	att	ctc	281
Glu	Gly	Ser	Lys	Arg	Tyr	Cys	Ile	Gln	Thr	Lys	His	Val	Ala	Ile	Leu	
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Cys	Ala	Val	Val	Val	Gly	Val	Gly	Leu	Ile	Val	Gly	Leu	Ala	Val	Gly	
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ttg	acc	aga	tcg	tgt	gac	tcc	agc	ggg	gac	ggc	ggg	ccg	ggc	act	gcg	377
Leu	Thr	Arg	Ser	Cys	Asp	Ser	Ser	Gly	Asp	Gly	Gly	Pro	Gly	Thr	Ala	
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Pro	Ala	Pro	Ser	His	Leu	Pro	Ser	Ser	Thr	Ala	Ser	Pro	Ser	Gly	Pro	
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Gln Trp Lys Asn Phe Arg Leu Pro Asp Phe Val Asn Pro Val His Tyr	
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Asp Leu His Val Lys Pro Leu Leu Glu Glu Asp Thr Tyr Thr Gly Thr	
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Val Ser Ile Ser Ile Asn Leu Ser Ala Pro Thr Arg Tyr Leu Trp Leu	
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His Leu Arg Glu Thr Arg Ile Thr Arg Leu Pro Glu Leu Lys Arg Pro	
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Ser Gly Asp Gln Val Gln Val Arg Arg Cys Phe Glu Tyr Lys Lys Gln	
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Glu Tyr Val Val Val Glu Ala Glu Glu Glu Leu Thr Pro Ser Ser Gly	
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Lys Ser Ile Val Ala Thr Asp His Glu Pro Thr Asp Ala Arg Lys Ser	
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Phe Pro Cys Phe Asp Glu Pro Asn Lys Lys Ala Thr Tyr Thr Ile Ser	
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Ile Thr His Pro Lys Glu Tyr Gly Ala Leu Ser Asn Met Pro Val Ala	
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gac tct gta aag aga ata tca aat agt gga aaa cct ctt aca att tat	1145
Asp Ser Val Lys Arg Ile Ser Asn Ser Gly Lys Pro Leu Thr Ile Tyr	
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Lys	Ser	Val	Phe	Asp	Tyr	Phe	Glu	Glu	Tyr	Phe	Ala	Met	Asn	Tyr	Ser	
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ctt	cct	aaa	tta	gat	aaa	atc	gct	att	cca	gat	ttt	ggc	act	ggg	gcc	1289
Leu	Pro	Lys	Leu	Asp	Lys	Ile	Ala	Ile	Pro	Asp	Phe	Gly	Thr	Gly	Ala	
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Met	Glu	Asn	Trp	Gly	Leu	Ile	Thr	Tyr	Arg	Glu	Thr	Asn	Leu	Leu	Tyr	
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Asp	Pro	Lys	Glu	Ser	Ala	Ser	Ser	Asn	Gln	Gln	Arg	Val	Ala	Thr	Val	
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Asp	Trp	Trp	Glu	Asp	Leu	Trp	Leu	Asn	Glu	Gly	Phe	Ala	Ser	Phe	Phe	
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Gln	Met	Leu	Leu	Glu	Asp	Val	Leu	Pro	Val	Gln	Glu	Asp	Asp	Ser	Leu	
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Arg	Met	Leu	Glu	Asp	Trp	Ile	Lys	Pro	Glu	Asn	Phe	Gln	Lys	Gly	Cys	
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Gln	Met	Tyr	Leu	Glu	Lys	Tyr	Gln	Phe	Lys	Asn	Ala	Lys	Thr	Ser	Asp	
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Phe	Trp	Ala	Ala	Leu	Glu	Glu	Ala	Ser	Arg	Leu	Pro	Val	Lys	Glu	Val	
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Gly	Val	Lys	Asn	Ile	Thr	Gln	Lys	Arg	Phe	Leu	Leu	Asp	Pro	Arg	Ala	
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585 590 595	
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Ser Glu Lys Glu Gly Ile Thr Leu Asn Ser Ser Asn Pro Ser Gly Asn	
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Ala Phe Leu Lys Ile Asn Pro Asp His Ile Gly Phe Tyr Arg Val Asn	
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Tyr Glu Val Ala Thr Trp Asp Ser Ile Ala Thr Ala Leu Ser Leu Asn	
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His Lys Thr Phe Ser Ser Ala Asp Arg Ala Ser Leu Ile Asp Asp Ala	
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Phe Ala Leu Ala Arg Ala Gln Leu Leu Asp Tyr Lys Val Ala Leu Asn	
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Leu Thr Lys Tyr Leu Lys Arg Glu Glu Asn Phe Leu Pro Trp Gln Arg	
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Val Ile Ser Ala Val Thr Tyr Ile Ile Ser Met Phe Glu Asp Asp Lys	
695 700 705 710	
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Glu Leu Tyr Pro Met Ile Glu Glu Tyr Phe Gln Gly Gln Val Lys Pro	
715 720 725	
att gca gat tct ctg gga tgg aat gat gct gga gac cat gtc aca aag	2441
Ile Ala Asp Ser Leu Gly Trp Asn Asp Ala Gly Asp His Val Thr Lys	
730 735 740	
tta ctc cgt tcc tcc gtg tta ggg ttt gcg tgc aag atg gga gac aga	2489
Leu Leu Arg Ser Ser Val Leu Gly Phe Ala Cys Lys Met Gly Asp Arg	
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gaa gcc ttg aac aat gct tcc tcg tta ttt gag cag tgg cta aat ggg	2537
Glu Ala Leu Asn Asn Ala Ser Ser Leu Phe Glu Gln Trp Leu Asn Gly	
760 765 770	
act gta agc ctt ccc gta aat ctc agg ctt ctg gtg tat cgg tat ggg	2585
Thr Val Ser Leu Pro Val Asn Leu Arg Leu Leu Val Tyr Arg Tyr Gly	
775 780 785 790	
atg cag aac tct ggc aat gag att tca tgg aac tac act ctt gag caa	2633
Met Gln Asn Ser Gly Asn Glu Ile Ser Trp Asn Tyr Thr Leu Glu Gln	
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Leu	Lys	Asp	Thr	Asn	Leu	Ile	Lys	Thr	Gln	Asp	Val	Phe	Thr	Val	Ile		
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Ile	Gln	Leu	Asn	Trp	Asp	Tyr	Leu	Val	Asn	Arg	Tyr	Thr	Leu	Asn	Asn		
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Arg	Asn	Leu	Gly	Arg	Ile	Val	Thr	Ile	Ala	Glu	Pro	Phe	Asn	Thr	Glu		
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Leu	Gln	Leu	Trp	Gln	Met	Glu	Ser	Phe	Phe	Ala	Lys	Tyr	Pro	Gln	Ala		
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Phe	Asn	Leu	Leu	Glu	Ser	Gly	*										
			955														
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 Val Gly Leu Ala Val Gly Leu Thr Arg Ser Cys Asp Ser Ser Gly Asp



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Leu Leu Asp Pro Arg Ala Asn Pro Ser Gln Pro Pro Ser Asp Leu Gly		
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Tyr Thr Trp Asn Ile Pro Val Lys Trp Thr Glu Asp Asn Ile Thr Ser		
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Ser Val Leu Phe Asn Arg Ser Glu Lys Glu Gly Ile Thr Leu Asn Ser		
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Ser Asn Pro Ser Gly Asn Ala Phe Leu Lys Ile Asn Pro Asp His Ile		
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Gly Phe Tyr Arg Val Asn Tyr Glu Val Ala Thr Trp Asp Ser Ile Ala		
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Thr Ala Leu Ser Leu Asn His Lys Thr Phe Ser Ser Ala Asp Arg Ala		
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Ser Leu Ile Asp Asp Ala Phe Ala Leu Ala Arg Ala Gln Leu Leu Asp		
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Tyr Lys Val Ala Leu Asn Leu Thr Lys Tyr Leu Lys Arg Glu Glu Asn		
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Phe Leu Pro Trp Gln Arg Val Ile Ser Ala Val Thr Tyr Ile Ile Ser		
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Met Phe Glu Asp Asp Lys Glu Leu Tyr Pro Met Ile Glu Glu Tyr Phe		
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Gln Gly Gln Val Lys Pro Ile Ala Asp Ser Leu Gly Trp Asn Asp Ala		
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Gly Asp His Val Thr Lys Leu Leu Arg Ser Ser Val Leu Gly Phe Ala		
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Cys Lys Met Gly Asp Arg Glu Ala Leu Asn Asn Ala Ser Ser Leu Phe		
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Glu Gln Trp Leu Asn Gly Thr Val Ser Leu Pro Val Asn Leu Arg Leu		
	770	775
Leu Val Tyr Arg Tyr Gly Met Gln Asn Ser Gly Asn Glu Ile Ser Trp		
785	790	795
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Glu Lys Leu Leu Tyr Gly Leu Ala Ser Val Lys Asn Val Thr Leu Leu		
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Ser Arg Tyr Leu Asp Leu Leu Lys Asp Thr Asn Leu Ile Lys Thr Gln		
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Asp Val Phe Thr Val Ile Arg Tyr Ile Ser Tyr Asn Ser Tyr Gly Lys		
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Leu Glu Thr Val Lys Asn Asn Ile Glu Trp Leu Lys Gln His Arg Asn		
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Asn Leu Asn Gly Ala Val Tyr Ser Val Val Phe Ile Leu Gly Leu Ile
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Phe Val Cys Thr Leu Pro Phe Lys Ile Phe Tyr Asn Phe Asn Arg His
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Trp Pro Phe Gly Asp Thr Leu Cys Lys Ile Ser Gly Thr Ala Phe Leu
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acc aac atc tat ggg agc atg ctc ttt ctc acc tgt att agt gtg gat 556
Thr Asn Ile Tyr Gly Ser Met Leu Phe Leu Thr Cys Ile Ser Val Asp
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cgt ttc ctg gcc att gtc tat cct ttt cga tct cgt act att agg act 604
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agg agg aat tct gcc att gtg tgt gct ggt gtc tgg atc cta gtc ctc 652
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Ser Gly Gly Ile Ser Ala Ser Leu Phe Ser Thr Thr Asn Val Asn Asn
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gca acc acc acc tgc ttt gaa ggc ttc tcc aaa cgt gtc tgg aag act 748
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Tyr Leu Ser Lys Ile Thr Ile Phe Ile Glu Val Val Gly Phe Ile Ile
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Arg	Lys	Pro	Ala	Thr	Leu	Ser	Gln	Ile	Gly	Thr	Asn	Lys	Lys	Lys	Val	
			235					240					245			
ctg	aaa	atg	atc	aca	gta	cat	atg	gca	gtc	ttt	gtg	gta	tgc	ttt	gta	940
Leu	Lys	Met	Ile	Thr	Val	His	Met	Ala	Val	Phe	Val	Val	Cys	Phe	Val	
		250					255					260				
ccc	tac	aac	tct	gtc	ctc	ttc	ttg	tat	gcc	ctg	gtg	cgc	tcc	caa	gct	988
Pro	Tyr	Asn	Ser	Val	Leu	Phe	Leu	Tyr	Ala	Leu	Val	Arg	Ser	Gln	Ala	
	265					270					275					
att	act	aat	tgc	ttt	ttg	gaa	aga	ttt	gca	aag	atc	atg	tac	cca	atc	1036
Ile	Thr	Asn	Cys	Phe	Leu	Glu	Arg	Phe	Ala	Lys	Ile	Met	Tyr	Pro	Ile	
280					285				290						295	
acc	ttg	tgc	ctt	gca	act	ctg	aac	tgt	tgt	ttt	gac	cct	ttc	atc	tat	1084
Thr	Leu	Cys	Leu	Ala	Thr	Leu	Asn	Cys	Cys	Phe	Asp	Pro	Phe	Ile	Tyr	
				300				305						310		
tac	ttc	acc	ctt	gaa	tcc	ttt	cag	aag	tcc	ttc	tac	atc	aat	gcc	cac	1132
Tyr	Phe	Thr	Leu	Glu	Ser	Phe	Gln	Lys	Ser	Phe	Tyr	Ile	Asn	Ala	His	
			315					320					325			
atc	aga	atg	gag	tcc	ctg	ttt	aag	act	gaa	aca	cct	ttg	acc	aca	aag	1180
Ile	Arg	Met	Glu	Ser	Leu	Phe	Lys	Thr	Glu	Thr	Pro	Leu	Thr	Thr	Lys	
		330					335					340				
cct	tcc	ctt	cca	gct	att	caa	gag	gaa	gtg	agt	gat	caa	aca	aca	aat	1228
Pro	Ser	Leu	Pro	Ala	Ile	Gln	Glu	Glu	Val	Ser	Asp	Gln	Thr	Thr	Asn	
	345					350					355					
aat	ggt	ggt	gaa	tta	atg	cta	gaa	tcc	acc	ttt	tag	gtatgagaag				1274
Asn	Gly	Gly	Glu	Leu	Met	Leu	Glu	Ser	Thr	Phe	*					
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<210> 86  
 <211> 370  
 <212> PRT  
 <213> Homo Sapiens

<400> 86

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Ser	Leu	Arg	Pro	Arg	Leu	Gly	Asn	Ala	Thr	Ala	Asn	Asn	Thr	Cys	Ile	
			20					25					30			
Val	Asp	Asp	Ser	Phe	Lys	Tyr	Asn	Leu	Asn	Gly	Ala	Val	Tyr	Ser	Val	
		35					40					45				
Val	Phe	Ile	Leu	Gly	Leu	Ile	Thr	Asn	Ser	Val	Ser	Leu	Phe	Val	Phe	
	50					55					60					
Cys	Phe	Arg	Met	Lys	Met	Arg	Ser	Glu	Thr	Ala	Ile	Phe	Ile	Thr	Asn	
65					70					75					80	
Leu	Ala	Val	Ser	Asp	Leu	Leu	Phe	Val	Cys	Thr	Leu	Pro	Phe	Lys	Ile	
				85				90						95		
Phe	Tyr	Asn	Phe	Asn	Arg	His	Trp	Pro	Phe	Gly	Asp	Thr	Leu	Cys	Lys	
			100					105					110			
Ile	Ser	Gly	Thr	Ala	Phe	Leu	Thr	Asn	Ile	Tyr	Gly	Ser	Met	Leu	Phe	



act gct tat ggg aaa act ggg atc cga gac gtc cac ctg gaa ctg aaa	364
Thr Ala Tyr Gly Lys Thr Gly Ile Arg Asp Val His Leu Glu Leu Lys	
60 65 70	
aac ctg acc atg tgt gga cgc aaa ggg gac ctg cac ttc atc cgc ttt	412
Asn Leu Thr Met Cys Gly Arg Lys Gly Asp Leu His Phe Ile Arg Phe	
75 80 85	
ccc agc tgt gct atg cac agg ttc att cag atg ggc agc gag aag aac	460
Pro Ser Cys Ala Met His Arg Phe Ile Gln Met Gly Ser Glu Lys Asn	
90 95 100	
ttc tct agc ctt cac acc acc ctc tgc gcc aca gga ggc ggg gct ttc	508
Phe Ser Ser Leu His Thr Thr Leu Cys Ala Thr Gly Gly Gly Ala Phe	
105 110 115	
aaa ttc gaa gag gac ttc aga atg att gct gac ctg cag ctg cat aaa	556
Lys Phe Glu Glu Asp Phe Arg Met Ile Ala Asp Leu Gln Leu His Lys	
120 125 130 135	
ctg gat gaa ctg gac tgt ctg att cag ggc ctg ctt tat gtc gac tct	604
Leu Asp Glu Leu Asp Cys Leu Ile Gln Gly Leu Leu Tyr Val Asp Ser	
140 145 150	
gtt ggc ttc aac ggc aag cca gaa tgt tac tat ttt gaa aat ccc aca	652
Val Gly Phe Asn Gly Lys Pro Glu Cys Tyr Tyr Phe Glu Asn Pro Thr	
155 160 165	
aat cct gaa ttg tgt caa aaa aag ccg tac tgc ctt gat aac cca tac	700
Asn Pro Glu Leu Cys Gln Lys Lys Pro Tyr Cys Leu Asp Asn Pro Tyr	
170 175 180	
cct atg ttg ctg gtt aac atg ggc tca ggt gtc agc att cta gcc gtg	748
Pro Met Leu Leu Val Asn Met Gly Ser Gly Val Ser Ile Leu Ala Val	
185 190 195	
tac tcc aag gac aac tat aaa aga gtt aca ggg acc agc ttt ggc aac	796
Tyr Ser Lys Asp Asn Tyr Lys Arg Val Thr Gly Thr Ser Phe Gly Asn	
200 205 210 215	
atg atg agt aaa gaa aag cga gat tcc atc agc aag gaa gac ctc gcc	844
Met Met Ser Lys Glu Lys Arg Asp Ser Ile Ser Lys Glu Asp Leu Ala	
220 225 230	
cgg gcc aca ttg gtc acc atc acc aac aac att ggc tcc att gct cgg	892
Arg Ala Thr Leu Val Thr Ile Thr Asn Asn Ile Gly Ser Ile Ala Arg	
235 240 245	
atg tgt gcg ttg aat gag aac ata gac aga gtt gtg ttt gtt gga aat	940
Met Cys Ala Leu Asn Glu Asn Ile Asp Arg Val Val Phe Val Gly Asn	
250 255 260	
ttt ctc aga atc aat atg gtc tcc atg aag ctg ctg gca tat gcc atg	988
Phe Leu Arg Ile Asn Met Val Ser Met Lys Leu Leu Ala Tyr Ala Met	
265 270 275	
gat ttt tgg tcc aaa gga caa ctg aaa gct ctg ttt ttg gaa cat gag	1036
Asp Phe Trp Ser Lys Gly Gln Leu Lys Ala Leu Phe Leu Glu His Glu	
280 285 290 295	
ggg tat ttt gga gcc gtt ggg gca ctg ttg gaa ctg ttc aaa atg act	1084



Gly Tyr Phe Gly Ala Val Gly Ala Leu Leu Glu Leu Phe Lys Met Thr  
 300 305 310

gat gac aag tag agacgagcag tggaggaaac agcctcccaa aaggacagag 1136  
 Asp Asp Lys \*

aactaaaaaa ttgctgctgg agaaggtgaa agtcgctttg ggacggggagc caagccatta 1196  
 tggcagatga acctgctgga tttgtaaaata atttaaaatc cttccagatg atctttttact 1256  
 cttagggtttt gagctaataa ttcaaaacgg gggaatataa aagggtttttt ttctgtatac 1316  
 tgtattttttt taaaaaaatg gtgcagcgtg gccaaaccta ccaattgtat gcattaactt 1376  
 tgaaaagttg tttgatgttt aagaaggacc tgatatgtaa gcgctgggtca tttttcttct 1436  
 ggggttttact gatcagtgtg gtgatttttaa cttcatttag taattactct aggagatttt 1496  
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 aaatctttgt gcaagaaatt tgaaacttat tgggaaaagc ctcccagtag attaatgtgt 2036  
 catatcagga gatttagggg aagtcatggg ttgaggtgtc agatagtaat atctatttgt 2096  
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 ttttcatttt taatatttta aactaaaaac tgtacttcaa tctcagtttc taaaattaaa 2216  
 aataatttat actgatctat atattttttc tttttgaaag atttcattaa gactgatggg 2276  
 taactttcaa atgaggggtca tgtacaaaata ttgggatgca tgagatccca tgatcttgtg 2336  
 tattgagctt attgttgaaa gggatttttg aaggacagaa caattactcc atgatgaatc 2396  
 ttcctttctc tgccttctga gcaccgtctt taatttccat atcttcaagt cttgaagaag 2456  
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<210> 88

<211> 314

<212> PRT

<213> Homo Sapiens

<400> 88

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 Ile Thr Ala Glu Glu Glu Gln Glu Glu Val Glu Asn Leu Lys Ser Ile  
 35 40 45  
 Arg Lys Tyr Leu Thr Ser Asn Thr Ala Tyr Gly Lys Thr Gly Ile Arg  
 50 55 60  
 Asp Val His Leu Glu Leu Lys Asn Leu Thr Met Cys Gly Arg Lys Gly  
 65 70 75 80  
 Asp Leu His Phe Ile Arg Phe Pro Ser Cys Ala Met His Arg Phe Ile  
 85 90 95  
 Gln Met Gly Ser Glu Lys Asn Phe Ser Ser Leu His Thr Thr Leu Cys  
 100 105 110  
 Ala Thr Gly Gly Gly Ala Phe Lys Phe Glu Glu Asp Phe Arg Met Ile  
 115 120 125  
 Ala Asp Leu Gln Leu His Lys Leu Asp Glu Leu Asp Cys Leu Ile Gln  
 130 135 140  
 Gly Leu Leu Tyr Val Asp Ser Val Gly Phe Asn Gly Lys Pro Glu Cys  
 145 150 155 160  
 Tyr Tyr Phe Glu Asn Pro Thr Asn Pro Glu Leu Cys Gln Lys Lys Pro  
 165 170 175  
 Tyr Cys Leu Asp Asn Pro Tyr Pro Met Leu Leu Val Asn Met Gly Ser  
 180 185 190  
 Gly Val Ser Ile Leu Ala Val Tyr Ser Lys Asp Asn Tyr Lys Arg Val



gtc acc aag aag cta gtg cgg cag gca gag aag atg ggc tac aag gcc	485
Val Thr Lys Lys Leu Val Arg Gln Ala Glu Lys Met Gly Tyr Lys Ala	
140 145 150	
ata ttt gtg aca gtg gac aca cct tac ctg ggc aac cgt ctg gat gat	533
Ile Phe Val Thr Val Asp Thr Pro Tyr Leu Gly Asn Arg Leu Asp Asp	
155 160 165 170	
gtg cgt aac aga ttc aaa ctg ccg cca caa ctc agg atg aaa aat ttt	581
Val Arg Asn Arg Phe Lys Leu Pro Pro Gln Leu Arg Met Lys Asn Phe	
175 180 185	
gaa acc agt act tta tca ttt tct cct gag gaa aat ttt gga gac gac	629
Glu Thr Ser Thr Leu Ser Phe Ser Pro Glu Glu Asn Phe Gly Asp Asp	
190 195 200	
agt gga ctt gct gca tat gtg gct aaa gca ata gac cca tct atc agc	677
Ser Gly Leu Ala Ala Tyr Val Ala Lys Ala Ile Asp Pro Ser Ile Ser	
205 210 215	
tgg gaa gat atc aaa tgg ctg aga aga ctg aca tca ttg cca att gtt	725
Trp Glu Asp Ile Lys Trp Leu Arg Arg Leu Thr Ser Leu Pro Ile Val	
220 225 230	
gca aag ggc att ttg aga ggt gat gat gcc agg gag gct gtt aaa cat	773
Ala Lys Gly Ile Leu Arg Gly Asp Asp Ala Arg Glu Ala Val Lys His	
235 240 245 250	
ggc ttg aat ggg atc ttg gtg tcg aat cat ggg gct cga caa ctc gat	821
Gly Leu Asn Gly Ile Leu Val Ser Asn His Gly Ala Arg Gln Leu Asp	
255 260 265	
ggg gtg cca gcc act att gat gtt ctg cca gaa att gtg gag gct gtg	869
Gly Val Pro Ala Thr Ile Asp Val Leu Pro Glu Ile Val Glu Ala Val	
270 275 280	
gaa ggg aag gtg gaa gtc ttc ctg gac ggg ggt gtg cgg aaa ggc act	917
Glu Gly Lys Val Glu Val Phe Leu Asp Gly Gly Val Arg Lys Gly Thr	
285 290 295	
gat gtt ctg aaa gct ctg gct ctt ggc gcc aag gct gtg ttt gtg ggg	965
Asp Val Leu Lys Ala Leu Ala Leu Gly Ala Lys Ala Val Phe Val Gly	
300 305 310	
aga cca atc gtt tgg ggc tta gct ttc cag ggg gag aaa ggt gtt caa	1013
Arg Pro Ile Val Trp Gly Leu Ala Phe Gln Gly Glu Lys Gly Val Gln	
315 320 325 330	
gat gtc ctc gag ata cta aag gaa gaa ttc cgg ttg gcc atg gct ctg	1061
Asp Val Leu Glu Ile Leu Lys Glu Glu Phe Arg Leu Ala Met Ala Leu	
335 340 345	
agt ggg tgc cag aat gtg aaa gtc atc gac aag aca ttg gtg agg aaa	1109
Ser Gly Cys Gln Asn Val Lys Val Ile Asp Lys Thr Leu Val Arg Lys	
350 355 360	
aat cct ttg gcc gtt tcc aag atc tga	1136
Asn Pro Leu Ala Val Ser Lys Ile *	
365 370	

<210> 90  
 <211> 370  
 <212> PRT  
 <213> Homo Sapiens

<400> 90  
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 Asp Glu Glu Thr Leu Ala Asp Asn Ile Ala Ala Phe Ser Arg Trp Lys  
 35 40 45  
 Leu Tyr Pro Arg Met Leu Arg Asn Val Ala Glu Thr Asp Leu Ser Thr  
 50 55 60  
 Ser Val Leu Gly Gln Arg Val Ser Met Pro Ile Cys Val Gly Ala Thr  
 65 70 75 80  
 Ala Met Gln Arg Met Ala His Val Asp Gly Glu Leu Ala Thr Val Arg  
 85 90 95  
 Ala Cys Gln Ser Leu Gly Thr Gly Met Met Leu Ser Ser Trp Ala Thr  
 100 105 110  
 Ser Ser Ile Glu Glu Val Ala Glu Ala Gly Pro Glu Ala Leu Arg Trp  
 115 120 125  
 Leu Gln Leu Tyr Ile Tyr Lys Asp Arg Glu Val Thr Lys Lys Leu Val  
 130 135 140  
 Arg Gln Ala Glu Lys Met Gly Tyr Lys Ala Ile Phe Val Thr Val Asp  
 145 150 155 160  
 Thr Pro Tyr Leu Gly Asn Arg Leu Asp Asp Val Arg Asn Arg Phe Lys  
 165 170 175  
 Leu Pro Pro Gln Leu Arg Met Lys Asn Phe Glu Thr Ser Thr Leu Ser  
 180 185 190  
 Phe Ser Pro Glu Glu Asn Phe Gly Asp Asp Ser Gly Leu Ala Ala Tyr  
 195 200 205  
 Val Ala Lys Ala Ile Asp Pro Ser Ile Ser Trp Glu Asp Ile Lys Trp  
 210 215 220  
 Leu Arg Arg Leu Thr Ser Leu Pro Ile Val Ala Lys Gly Ile Leu Arg  
 225 230 235 240  
 Gly Asp Asp Ala Arg Glu Ala Val Lys His Gly Leu Asn Gly Ile Leu  
 245 250 255  
 Val Ser Asn His Gly Ala Arg Gln Leu Asp Gly Val Pro Ala Thr Ile  
 260 265 270  
 Asp Val Leu Pro Glu Ile Val Glu Ala Val Glu Gly Lys Val Glu Val  
 275 280 285  
 Phe Leu Asp Gly Gly Val Arg Lys Gly Thr Asp Val Leu Lys Ala Leu  
 290 295 300  
 Ala Leu Gly Ala Lys Ala Val Phe Val Gly Arg Pro Ile Val Trp Gly  
 305 310 315 320  
 Leu Ala Phe Gln Gly Glu Lys Gly Val Gln Asp Val Leu Glu Ile Leu  
 325 330 335  
 Lys Glu Glu Phe Arg Leu Ala Met Ala Leu Ser Gly Cys Gln Asn Val  
 340 345 350  
 Lys Val Ile Asp Lys Thr Leu Val Arg Lys Asn Pro Leu Ala Val Ser  
 355 360 365  
 Lys Ile  
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<210> 91  
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 <212> DNA  
 <213> Homo Sapiens

<220>

<221> CDS

<222> (62)...(1240)

<400> 91

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  Met Gly Thr Lys Gly Lys Val Ile Lys Cys Lys Ala Ala Ile Ala Trp
    1             5             10             15

gaa gca ggc aag ccc ctt tgc att gaa gag gtt gaa gta gct ccc ccc 157
Glu Ala Gly Lys Pro Leu Cys Ile Glu Glu Val Glu Val Ala Pro Pro
          20             25             30

aag gct cat gaa gtt cgc att cag atc att gct acc tcc ctg tgc cat 205
Lys Ala His Glu Val Arg Ile Gln Ile Ile Ala Thr Ser Leu Cys His
          35             40             45

act gat gcc agt gtt atc gat tct aaa ttt gag ggc cta gct ttc cca 253
Thr Asp Ala Ser Val Ile Asp Ser Lys Phe Glu Gly Leu Ala Phe Pro
          50             55             60

gtg atc gtt ggc cat gag gct gca ggt att gtg gaa agt att ggg cca 301
Val Ile Val Gly His Glu Ala Ala Gly Ile Val Glu Ser Ile Gly Pro
          65             70             75             80

gga gtg acc aac gtc aaa cca ggt gac aaa gta att cca ctt tat gca 349
Gly Val Thr Asn Val Lys Pro Gly Asp Lys Val Ile Pro Leu Tyr Ala
          85             90             95

cct cta tgt aga aaa tgc aag ttt tgt ctg agt cca ctc aca aat ttg 397
Pro Leu Cys Arg Lys Cys Lys Phe Cys Leu Ser Pro Leu Thr Asn Leu
          100            105            110

tgt ggg aaa atc agt aat ctc aaa agt cct gct agt gat caa caa cta 445
Cys Gly Lys Ile Ser Asn Leu Lys Ser Pro Ala Ser Asp Gln Gln Leu
          115            120            125

atg gaa gac aaa acc agc agg ttt acc tgc aaa gga aaa cca gtt tac 493
Met Glu Asp Lys Thr Ser Arg Phe Thr Cys Lys Gly Lys Pro Val Tyr
          130            135            140

cat ttc ttt gga acc agt aca ttc tct cag tac act gtg gtg tca gat 541
His Phe Phe Gly Thr Ser Thr Phe Ser Gln Tyr Thr Val Val Ser Asp
          145            150            155            160

atc aat ctt gcc aaa ata gat gat gat gca aat tta gag aga gtt tgt 589
Ile Asn Leu Ala Lys Ile Asp Asp Asp Ala Asn Leu Glu Arg Val Cys
          165            170            175

ctg ctt gga tgt ggg ttt tca act ggc tat ggg gct gca atc aac aat 637
Leu Leu Gly Cys Gly Phe Ser Thr Gly Tyr Gly Ala Ala Ile Asn Asn
          180            185            190

gcc aag gtc acc cct ggt tcg act tgt gct gtc ttt ggc cta gga ggt 685
Ala Lys Val Thr Pro Gly Ser Thr Cys Ala Val Phe Gly Leu Gly Gly
          195            200            205

gtg ggt ctt tct gct gta atg ggt tgt aaa gca gca gga gct tcc aga 733
Val Gly Leu Ser Ala Val Met Gly Cys Lys Ala Ala Gly Ala Ser Arg
          210            215            220

atc ata ggt att gac atc aac agt gag aag ttt gtg aag gct aaa gcc 781
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Ile	Ile	Gly	Ile	Asp	Ile	Asn	Ser	Glu	Lys	Phe	Val	Lys	Ala	Lys	Ala	
225					230					235					240	
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Leu	Gly	Ala	Thr	Asp	Cys	Leu	Asn	Pro	Arg	Asp	Leu	His	Lys	Pro	Ile	
				245					250					255		
cag	gaa	gtt	atc	att	gaa	ttg	acc	aag	gga	ggt	gtg	gat	ttt	gcc	ctt	877
Gln	Glu	Val	Ile	Ile	Glu	Leu	Thr	Lys	Gly	Gly	Val	Asp	Phe	Ala	Leu	
			260					265					270			
gac	tgt	gca	ggg	gga	tct	gaa	acc	atg	aaa	gca	gcc	ctg	gac	tgt	aca	925
Asp	Cys	Ala	Gly	Gly	Ser	Glu	Thr	Met	Lys	Ala	Ala	Leu	Asp	Cys	Thr	
		275					280					285				
acc	gca	ggc	tgg	gga	tca	tgt	act	ttc	att	gga	gta	gct	gct	ggg	agc	973
Thr	Ala	Gly	Trp	Gly	Ser	Cys	Thr	Phe	Ile	Gly	Val	Ala	Ala	Gly	Ser	
	290					295					300					
aaa	gga	ttg	act	att	ttt	cca	gag	gag	cta	ata	atc	ggc	cgt	act	ata	1021
Lys	Gly	Leu	Thr	Ile	Phe	Pro	Glu	Glu	Leu	Ile	Ile	Gly	Arg	Thr	Ile	
305					310					315					320	
aat	gga	aca	ttc	ttt	ggg	ggg	tgg	aaa	agt	gta	gat	tct	atc	cca	aag	1069
Asn	Gly	Thr	Phe	Phe	Gly	Gly	Trp	Lys	Ser	Val	Asp	Ser	Ile	Pro	Lys	
				325					330					335		
ctg	gtc	act	gac	tat	aag	aat	aag	aaa	ttc	aat	ctg	gat	gca	ttg	gtg	1117
Leu	Val	Thr	Asp	Tyr	Lys	Asn	Lys	Lys	Phe	Asn	Leu	Asp	Ala	Leu	Val	
			340					345					350			
acc	cat	acc	ctg	cct	ttt	gac	aaa	atc	agt	gag	gca	ttt	gac	cta	atg	1165
Thr	His	Thr	Leu	Pro	Phe	Asp	Lys	Ile	Ser	Glu	Ala	Phe	Asp	Leu	Met	
		355					360					365				
aac	caa	gga	aaa	agc	gtc	cga	aca	atc	ctc	atc	ttt	gga	aga	tgc	cag	1213
Asn	Gln	Gly	Lys	Ser	Val	Arg	Thr	Ile	Leu	Ile	Phe	Gly	Arg	Cys	Gln	
	370					375					380					
gag	caa	ttc	aga	ata	cta	tct	gat	tga	atgtgaacct	gcctgggtaa						1260
Glu	Gln	Phe	Arg	Ile	Leu	Ser	Asp	*								
385					390											
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Lys Ala His Glu Val Arg Ile Gln Ile Ile Ala Thr Ser Leu Cys His
          35          40          45
Thr Asp Ala Ser Val Ile Asp Ser Lys Phe Glu Gly Leu Ala Phe Pro
          50          55          60
Val Ile Val Gly His Glu Ala Ala Gly Ile Val Glu Ser Ile Gly Pro
65          70          75          80
Gly Val Thr Asn Val Lys Pro Gly Asp Lys Val Ile Pro Leu Tyr Ala
          85          90          95
Pro Leu Cys Arg Lys Cys Lys Phe Cys Leu Ser Pro Leu Thr Asn Leu
          100          105          110
Cys Gly Lys Ile Ser Asn Leu Lys Ser Pro Ala Ser Asp Gln Gln Leu
          115          120          125
Met Glu Asp Lys Thr Ser Arg Phe Thr Cys Lys Gly Lys Pro Val Tyr
          130          135          140
His Phe Phe Gly Thr Ser Thr Phe Ser Gln Tyr Thr Val Val Ser Asp
145          150          155          160
Ile Asn Leu Ala Lys Ile Asp Asp Asp Ala Asn Leu Glu Arg Val Cys
          165          170          175
Leu Leu Gly Cys Gly Phe Ser Thr Gly Tyr Gly Ala Ala Ile Asn Asn
          180          185          190
Ala Lys Val Thr Pro Gly Ser Thr Cys Ala Val Phe Gly Leu Gly Gly
          195          200          205
Val Gly Leu Ser Ala Val Met Gly Cys Lys Ala Ala Gly Ala Ser Arg
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Ile Ile Gly Ile Asp Ile Asn Ser Glu Lys Phe Val Lys Ala Lys Ala
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Leu Gly Ala Thr Asp Cys Leu Asn Pro Arg Asp Leu His Lys Pro Ile
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Gln Glu Val Ile Ile Glu Leu Thr Lys Gly Gly Val Asp Phe Ala Leu
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Asp Cys Ala Gly Gly Ser Glu Thr Met Lys Ala Ala Leu Asp Cys Thr
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Thr Ala Gly Trp Gly Ser Cys Thr Phe Ile Gly Val Ala Ala Gly Ser
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Lys Gly Leu Thr Ile Phe Pro Glu Glu Leu Ile Ile Gly Arg Thr Ile
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Asn Gly Thr Phe Phe Gly Gly Trp Lys Ser Val Asp Ser Ile Pro Lys
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Leu Val Thr Asp Tyr Lys Asn Lys Lys Phe Asn Leu Asp Ala Leu Val
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Thr His Thr Leu Pro Phe Asp Lys Ile Ser Glu Ala Phe Asp Leu Met
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Phe Pro Glu Ser Phe Gly Val Lys Glu Arg Asp Gln Phe Tyr Thr Ser	
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Pro Ser Asn Tyr Glu Lys Leu Glu Tyr Arg Asn Arg Leu Glu Glu Thr	
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Leu *	

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Gly Arg Trp Arg Val Ser Asp Asp Thr Val Met His Leu Ala Thr Ala
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Glu Ala Leu Val Glu Ala Gly Lys Ala Pro Lys Leu Thr Gln Leu Tyr
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Tyr Leu Leu Ala Lys His Tyr Gln Asp Cys Met Glu Asp Met Asp Gly
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Arg Ala Pro Gly Gly Ala Ser Val His Asn Ala Met Gln Leu Lys Pro
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Gly Lys Pro Asn Gly Trp Arg Ile Pro Phe Asn Ser His Glu Gly Gly
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Met	Thr	His	His	His	Pro	Thr	Gly	Tyr	Leu	Gly	Ala	Leu	Ala	Ser	Ala
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Phe	Tyr	Thr	Ser	Leu	Ser	Tyr	Ser	Gly	Trp	Gly	Gly	Ser	Ser	Gly	His
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Asp Ser Asp Tyr Ile Asn Ala Asn Phe Ile Lys Gly Val Tyr Gly Pro	
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Leu Tyr Gly Glu Asp Pro Ile Thr Phe Ala Pro Phe Lys Ile Ser Cys	
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Glu Asp Glu Gln Ala Arg Thr Asp Tyr Phe Ile Arg Thr Leu Leu Leu	
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Leu Val Asp His Asp Asn Thr Ser Pro Leu Phe Arg Thr Pro Leu Ser				
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Ser Gly Ala Glu Lys Asp	Val Asp Val Ser Glu Asp	Ser Pro Pro Pro				
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Arg Asp Pro Pro Ser	Glu Trp Thr					
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 Met  
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Ser Ser Ser Glu Asn Gly Gly Lys Ser Glu Ser Val Ala Asn Leu Gln	
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Ala Gln Pro Ser Leu Asn Ser Ile His Ser Ser Pro Gly Pro Lys Arg	
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Asn Ser Gly Lys Ala Asp Gly Asn Ile Lys Lys Gln Lys Lys Val Arg	
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Thr Thr Pro Gln Gly Asp Ser Ala Asp Glu Lys Ser Lys Lys Gly Trp	
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Gln	Leu	Leu	Leu	Lys	Asp	Phe	Leu	Arg	Tyr	Ser	Glu	Lys	Ala	Gly	Leu	
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<210> 98

<211> 1289

<212> PRT

<213> Homo Sapiens

<400> 98

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Gln Ala Gln Pro Ser Leu Asn Ser Ile His Ser Ser Pro Gly Pro Lys
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Arg Ser Thr Asn Thr Leu Lys Lys Trp Leu Thr Ser Pro Val Arg Arg
65          70          75          80
Leu Asn Ser Gly Lys Ala Asp Gly Asn Ile Lys Lys Gln Lys Lys Val
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Arg Asp Gly Arg Lys Ser Phe Asp Leu Gly Ser Pro Lys Pro Gly Asp
100          105          110
Glu Thr Thr Pro Gln Gly Asp Ser Ala Asp Glu Lys Ser Lys Lys Gly
115          120          125
Trp Gly Glu Asp Glu Pro Asp Glu Glu Ser His Thr Pro Leu Pro Pro
130          135          140
Pro Met Lys Ile Phe Asp Asn Asp Pro Thr Gln Asp Glu Met Ser Ser
145          150          155          160
Ser Leu Leu Ala Ala Arg Gln Ala Ser Thr Glu Val Pro Thr Ala Ala
165          170          175
Asp Leu Val Asn Ala Ile Glu Lys Leu Val Lys Asn Lys Leu Ser Leu
180          185          190
Glu Gly Ser Ser Tyr Arg Gly Ser Leu Lys Asp Pro Ala Gly Cys Leu
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Asn Glu Gly Met Ala Pro Pro Thr Pro Pro Lys Asn Pro Glu Glu Glu
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Gln Lys Ala Lys Ala Leu Arg Gly Arg Met Phe Val Leu Asn Glu Leu
225          230          235          240
Val Gln Thr Glu Lys Asp Tyr Val Lys Asp Leu Gly Ile Val Val Glu
245          250          255
Gly Phe Met Lys Arg Ile Glu Glu Lys Gly Val Pro Glu Asp Met Arg
260          265          270
Gly Lys Asp Lys Ile Val Phe Gly Asn Ile His Gln Ile Tyr Asp Trp
275          280          285
His Lys Asp Phe Phe Leu Ala Glu Leu Glu Lys Cys Ile Gln Glu Gln
290          295          300
Asp Arg Leu Ala Gln Leu Phe Ile Lys His Glu Arg Lys Leu His Ile
305          310          315          320
Tyr Val Trp Tyr Cys Gln Asn Lys Pro Arg Ser Glu Tyr Ile Val Ala
325          330          335

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Glu	Tyr	Asp	Ala	Tyr	Phe	Glu	Glu	Val	Lys	Gln	Glu	Ile	Asn	Gln	Arg		
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Leu	Thr	Leu	Ser	Asp	Phe	Leu	Ile	Lys	Pro	Ile	Gln	Arg	Ile	Thr	Lys		
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Ala	Leu	Met	Asn	Arg	Glu	Thr	Ser	Glu	Arg	Val	Val	Leu	Gln	Ala	Ala		
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Glu	Thr	Gln	Arg	Asp	Phe	Leu	Asn	Ala	Leu	Gln	Ser	Pro	Ile	Glu	Tyr		
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Gly	Asp	Lys	Phe	Glu	Ala	Ser	Lys	Gln	Asn	Asp	Leu	Gly	Gly	Cys	Asn		
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Pro	Ala	Ala	Glu	Gly	Trp	Val	Pro	Gly	Ser	Ile	Leu	Ala	Pro	Leu	Thr		
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Lys	Ala	Thr	Ala	Ala	Glu	Ser	Ser	Asp	Gly	Ser	Ile	Lys	Lys	Ser	Cys		
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Ser	Trp	His	Thr	Leu	Arg	Met	Arg	Lys	Arg	Ala	Glu	Val	Glu	Asn	Thr		
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Ile	Gln	Glu	Val	Ala	Pro	Glu	Phe	Leu	Val	Pro	Leu	Val	Asp	Val	Thr		
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Cys	Leu	Leu	Gly	Asp	Thr	Val	Ile	Leu	Gln	Cys	Lys	Val	Cys	Gly	Arg		
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Glu	Ile	Thr	Leu	Lys	Ile	Cys	Asn	Leu	Met	Pro	Gln	Asp	Ser	Gly	Ile		
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His	Phe	His	Ile	His	His	Leu	Leu	Gly	Asn	Pro	Glu	Phe	Ala	Ala	Pro		
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<211> 2160



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 <213> Homo Sapiens

<220>  
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<400> 99

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Pro Leu Cys Pro Leu Leu Leu Val Gly Phe Ser Leu Pro Leu Ala Arg
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gct ctc agg ggc aac gag acc act gcc gac agc aac gag aca acc acg 153
Ala Leu Arg Gly Asn Glu Thr Thr Ala Asp Ser Asn Glu Thr Thr Thr
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acc tca ggc cct ccg gac ccg ggc gcc tcc cag ccg ctg ctg gcc tgg 201
Thr Ser Gly Pro Pro Asp Pro Gly Ala Ser Gln Pro Leu Leu Ala Trp
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ctg cta ctg ccg ctg ctg ctc ctc ctc ctc gtg ctc ctt ctc gcc gcc 249
Leu Leu Leu Pro Leu Leu Leu Leu Leu Leu Val Leu Leu Leu Ala Ala
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Tyr Phe Phe Arg Phe Arg Lys Gln Arg Lys Ala Val Val Ser Thr Ser
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Asp Lys Lys Met Pro Asn Gly Ile Leu Glu Glu Gln Glu Gln Gln Arg
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Val Met Leu Leu Ser Arg Ser Pro Ser Gly Pro Lys Lys Tyr Phe Pro
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Ile Pro Val Glu His Leu Glu Glu Glu Ile Arg Ile Arg Ser Ala Asp
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Ile Gln Gly Thr Phe Glu Leu Ala Asn Lys Glu Glu Asn Arg Glu Lys
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aac aga tat ccc aac atc ctt ccc aat gac cat tct agg gtg att ctg 585
Asn Arg Tyr Pro Asn Ile Leu Pro Asn Asp His Ser Arg Val Ile Leu
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agc caa ctg gat gga att ccc tgt tca gac tac atc aat gct tcc tac 633
Ser Gln Leu Asp Gly Ile Pro Cys Ser Asp Tyr Ile Asn Ala Ser Tyr
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Ile Asp Gly Tyr Lys Glu Lys Asn Lys Phe Ile Ala Ala Gln Gly Pro

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tct gcg acc atc gtc atg tta aca aac ttg aaa gaa agg aaa gag gaa	777			
Ser Ala Thr Ile Val Met Leu Thr Asn Leu Lys Glu Arg Lys Glu Glu				
230 235 240				
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Lys Cys His Gln Tyr Trp Pro Asp Gln Gly Cys Trp Thr Tyr Gly Asn				
245 250 255				
atc cgg gtg tgc gtg gag gac tgc gtg gtt ttg gtc gac tac acc atc	873			
Ile Arg Val Cys Val Glu Asp Cys Val Val Leu Val Asp Tyr Thr Ile				
260 265 270				
cgg aag ttc tgc ata cag cca cag ctc ccc gac ggc tgc aaa gcc ccc	921			
Arg Lys Phe Cys Ile Gln Pro Gln Leu Pro Asp Gly Cys Lys Ala Pro				
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Arg Leu Val Ser Gln Leu His Phe Thr Ser Trp Pro Asp Phe Gly Val				
295 300 305				
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Pro Phe Thr Pro Ile Gly Met Leu Lys Phe Leu Lys Lys Val Lys Thr				
310 315 320				
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325 330 335				
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435 440 445 450				

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Arg Glu Gln Asp Lys Cys Tyr Gln Tyr Trp Pro Thr Glu Gly Ser Val	
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Thr His Gly Glu Ile Thr Ile Glu Ile Lys Asn Asp Thr Leu Ser Glu	
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Trp Pro Glu Ile Gly Ile Pro Ala Glu Gly Lys Gly Met Ile Asp Leu	
595 600 605 610	
atc gca gcc gtg cag aag cag cag cag cag aca ggc aac cac ccc atc	1929
Ile Ala Ala Val Gln Lys Gln Gln Gln Gln Thr Gly Asn His Pro Ile	
615 620 625	
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Thr Val His Cys Ser Ala Gly Ala Gly Arg Thr Gly Thr Phe Ile Ala	
630 635 640	
ctc agc aac att ttg gag cga gta aaa gcc gag gga ctt tta gat gta	2025
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Thr Leu Glu Gln Tyr Glu Phe Cys Tyr Lys Val Val Gln Asp Phe Ile	
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 <212> PRT  
 <213> Homo Sapiens

<400> 100

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Thr	Thr	Thr	Ser	Gly	Pro	Pro	Asp	Pro	Gly	Ala	Ser	Gln	Pro	Leu	Leu
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Ala	Trp	Leu	Leu	Leu	Pro	Leu	Leu	Leu	Leu	Leu	Val	Leu	Leu	Leu	
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Gln	Arg	Val	Met	Leu	Leu	Ser	Arg	Ser	Pro	Ser	Gly	Pro	Lys	Lys	Tyr
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Phe	Pro	Ile	Pro	Val	Glu	His	Leu	Glu	Glu	Glu	Ile	Arg	Ile	Arg	Ser
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Gln	Lys	Ser	Ala	Thr	Ile	Val	Met	Leu	Thr	Asn	Leu	Lys	Glu	Arg	Lys
225					230					235					240
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Asn Ile Met Glu Leu Lys Thr Asn Gly Pro Arg Lys Ile Gly Tyr Trp	
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Trp Asp Lys Phe Ala Tyr Leu Tyr Asp Ser Asp Arg Gly Leu Ser Thr
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Leu Gln Ala Val Leu Asp Ser Ala Ala Glu Lys Lys Trp Gln Val Thr





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Ile Arg Val Val Gln Val Leu Gly Met Val Gly Thr Ala Leu Leu Ala	
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Ser Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val	
100 105 110	

Ala	Phe	Leu	Ala	Leu	Ala	Phe	Val	Leu	Ala	Leu	Ala	Cys	Cys	Ala	Ser	115	120	125
Asn	Val	Thr	Phe	Leu	Pro	Phe	Leu	Ser	His	Leu	Pro	Pro	Arg	Phe	Leu	130	135	140
Arg	Ser	Phe	Phe	Leu	Gly	Gln	Gly	Leu	Ser	Ala	Leu	Leu	Pro	Cys	Val	145	150	155
Leu	Ala	Leu	Val	Gln	Gly	Val	Gly	Arg	Leu	Glu	Cys	Pro	Pro	Ala	Pro	165	170	175
Ile	Asn	Gly	Thr	Pro	Gly	Pro	Pro	Leu	Asp	Phe	Leu	Glu	Arg	Phe	Pro	180	185	190
Ala	Ser	Thr	Phe	Phe	Trp	Ala	Leu	Thr	Ala	Leu	Leu	Val	Ala	Ser	Ala	195	200	205
Ala	Ala	Phe	Gln	Gly	Leu	Leu	Leu	Leu	Pro	Pro	Pro	Pro	Ser	Val		210	215	220
Pro	Thr	Gly	Glu	Leu	Gly	Ser	Gly	Leu	Gln	Val	Gly	Ala	Pro	Gly	Ala	225	230	235
Glu	Glu	Glu	Val	Glu	Glu	Ser	Ser	Pro	Leu	Gln	Glu	Pro	Pro	Ser	Gln	245	250	255
Ala	Ala	Gly	Thr	Thr	Pro	Gly	Pro	Asp	Pro	Lys	Ala	Tyr	Gln	Leu	Leu	260	265	270
Ser	Ala	Arg	Ser	Ala	Cys	Leu	Leu	Gly	Leu	Leu	Ala	Ala	Thr	Asn	Ala	275	280	285
Leu	Thr	Asn	Gly	Val	Leu	Pro	Ala	Val	Gln	Ser	Phe	Ser	Cys	Leu	Pro	290	295	300
Tyr	Gly	Arg	Leu	Ala	Tyr	His	Leu	Ala	Val	Val	Leu	Gly	Ser	Ala	Ala	305	310	315
Asn	Pro	Leu	Ala	Cys	Phe	Leu	Ala	Met	Gly	Val	Leu	Cys	Arg	Ser	Leu	325	330	335
Ala	Gly	Leu	Gly	Gly	Leu	Ser	Leu	Leu	Gly	Val	Phe	Cys	Gly	Gly	Tyr	340	345	350
Leu	Met	Ala	Leu	Ala	Val	Leu	Ser	Pro	Cys	Pro	Pro	Leu	Val	Gly	Thr	355	360	365
Ser	Ala	Gly	Val	Val	Leu	Val	Val	Leu	Ser	Trp	Val	Leu	Cys	Leu	Gly	370	375	380
Val	Phe	Ser	Tyr	Val	Lys	Val	Ala	Ala	Ser	Ser	Leu	Leu	His	Gly	Gly	385	390	395
Gly	Arg	Pro	Ala	Leu	Ala	Ala	Gly	Val	Ala	Ile	Gln	Val	Gly	Ser		405	410	415
Leu	Leu	Gly	Ala	Val	Ala	Met	Phe	Pro	Pro	Thr	Ser	Ile	Tyr	His	Val	420	425	430
Phe	His	Ser	Arg	Lys	Asp	Cys	Ala	Asp	Pro	Cys	Asp	Ser				435	440	445

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 <212> DNA  
 <213> Homo Sapiens

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 <222> (367)...(1770)

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 tcttcttacc gcgaagaagc caggggaata ggtagccaca tcttgtttgc agataagaaa 180  
 ggaagctaac cgagtatctg caaagccagg agtctgactc agtacttttc tcactcatgc 240  
 atacaagcag ctaaaaatga cacagcttat ttaccatgcc cctgacactg cactgagcac 300  
 tttatgagct tgaactctgt taatctcacg accacctcat gagactctcc agaaagagca 360  
 acagta atg gag tac atg agc act gga agt gac aat aaa gaa gag att 408  
 Met Glu Tyr Met Ser Thr Gly Ser Asp Asn Lys Glu Glu Ile

1				5				10								
gat	tta	tta	att	aaa	cat	tta	aat	gtg	tct	gat	gta	ata	gac	att	atg	456
Asp	Leu	Leu	Ile	Lys	His	Leu	Asn	Val	Ser	Asp	Val	Ile	Asp	Ile	Met	
15					20					25					30	
gaa	aat	ctt	tat	gca	agt	gaa	gag	cca	gca	gtt	tat	gaa	ccc	agt	cta	504
Glu	Asn	Leu	Tyr	Ala	Ser	Glu	Glu	Pro	Ala	Val	Tyr	Glu	Pro	Ser	Leu	
				35					40					45		
atg	acc	atg	tgt	caa	gac	agt	aat	caa	aac	gat	gag	cgt	tct	aag	tct	552
Met	Thr	Met	Cys	Gln	Asp	Ser	Asn	Gln	Asn	Asp	Glu	Arg	Ser	Lys	Ser	
			50					55					60			
ctg	ctg	ctt	agt	ggc	caa	gag	gta	cca	tgg	ttg	tca	tca	gtc	aga	tat	600
Leu	Leu	Leu	Ser	Gly	Gln	Glu	Val	Pro	Trp	Leu	Ser	Ser	Val	Arg	Tyr	
		65					70					75				
gga	act	gtg	gag	gat	ttg	ctt	gct	ttt	gca	aac	cat	ata	tcc	aac	act	648
Gly	Thr	Val	Glu	Asp	Leu	Leu	Ala	Phe	Ala	Asn	His	Ile	Ser	Asn	Thr	
	80					85					90					
gca	aag	cat	ttt	tat	gga	caa	cga	cca	cag	gaa	tct	gga	att	tta	tta	696
Ala	Lys	His	Phe	Tyr	Gly	Gln	Arg	Pro	Gln	Glu	Ser	Gly	Ile	Leu	Leu	
	95				100					105					110	
aac	atg	gtc	atc	act	ccc	caa	aat	gga	cgt	tac	caa	ata	gat	tcc	gat	744
Asn	Met	Val	Ile	Thr	Pro	Gln	Asn	Gly	Arg	Tyr	Gln	Ile	Asp	Ser	Asp	
				115					120					125		
gtt	ctc	ctg	atc	ccc	tgg	aag	ctg	act	tac	agg	aat	att	ggg	tct	gat	792
Val	Leu	Leu	Ile	Pro	Trp	Lys	Leu	Thr	Tyr	Arg	Asn	Ile	Gly	Ser	Asp	
			130					135					140			
ttt	att	cct	cgg	ggc	gcc	ttt	gga	aag	gta	tac	ttg	gct	caa	gat	ata	840
Phe	Ile	Pro	Arg	Gly	Ala	Phe	Gly	Lys	Val	Tyr	Leu	Ala	Gln	Asp	Ile	
		145					150					155				
aag	acg	aag	aaa	aga	atg	gcg	tgt	aaa	ctg	atc	cca	gta	gat	caa	ttt	888
Lys	Thr	Lys	Lys	Arg	Met	Ala	Cys	Lys	Leu	Ile	Pro	Val	Asp	Gln	Phe	
	160					165					170					
aag	cca	tct	gat	gtg	gaa	att	cag	gct	tgc	ttc	cgg	cac	gag	aac	atc	936
Lys	Pro	Ser	Asp	Val	Glu	Ile	Gln	Ala	Cys	Phe	Arg	His	Glu	Asn	Ile	
	175				180				185						190	
gca	gag	ctg	tat	ggc	gca	gtc	ctg	tgg	ggg	gaa	act	gtc	cat	ctc	ttt	984
Ala	Glu	Leu	Tyr	Gly	Ala	Val	Leu	Trp	Gly	Glu	Thr	Val	His	Leu	Phe	
				195					200					205		
atg	gaa	gca	ggc	gag	gga	ggg	tct	gtt	ctg	gag	aaa	ctg	gag	agc	tgt	1032
Met	Glu	Ala	Gly	Glu	Gly	Gly	Ser	Val	Leu	Glu	Lys	Leu	Glu	Ser	Cys	
			210					215					220			
gga	cca	atg	aga	gaa	ttt	gaa	att	att	tgg	gtg	aca	aag	cat	gtt	ctc	1080
Gly	Pro	Met	Arg	Glu	Phe	Glu	Ile	Ile	Trp	Val	Thr	Lys	His	Val	Leu	
		225					230					235				
aag	gga	ctt	gat	ttt	cta	cac	tca	aag	aaa	gtg	atc	cat	cat	gat	att	1128
Lys	Gly	Leu	Asp	Phe	Leu	His	Ser	Lys	Lys	Val	Ile	His	His	Asp	Ile	
	240					245					250					

aaa cct agc aac att gtt ttc atg tcc aca aaa gct gtt ttg gtg gat	1176
Lys Pro Ser Asn Ile Val Phe Met Ser Thr Lys Ala Val Leu Val Asp	
255 260 265 270	
ttt ggc cta agt gtt caa atg acc gaa gat gtc tat ttt cct aag gac	1224
Phe Gly Leu Ser Val Gln Met Thr Glu Asp Val Tyr Phe Pro Lys Asp	
275 280 285	
ctc cga gga aca gag att tac atg agc cca gag gtc atc ctg tgc agg	1272
Leu Arg Gly Thr Glu Ile Tyr Met Ser Pro Glu Val Ile Leu Cys Arg	
290 295 300	
ggc cat tca acc aaa gca gac atc tac agc ctg ggg gcc acg ctc atc	1320
Gly His Ser Thr Lys Ala Asp Ile Tyr Ser Leu Gly Ala Thr Leu Ile	
305 310 315	
cac atg cag acg ggc acc cca ccc tgg gtg aag cgc tac cct cgc tca	1368
His Met Gln Thr Gly Thr Pro Pro Trp Val Lys Arg Tyr Pro Arg Ser	
320 325 330	
gcc tat ccc tcc tac ctg tac ata atc cac aag caa gca cct cca ctg	1416
Ala Tyr Pro Ser Tyr Leu Tyr Ile Ile His Lys Gln Ala Pro Pro Leu	
335 340 345 350	
gaa gac att gca gat gac tgc agt cca ggg atg aga gag ctg ata gaa	1464
Glu Asp Ile Ala Asp Asp Cys Ser Pro Gly Met Arg Glu Leu Ile Glu	
355 360 365	
gct tcc ctg gag aga aac ccc aat cac cgc cca aga gcc gca gac cta	1512
Ala Ser Leu Glu Arg Asn Pro Asn His Arg Pro Arg Ala Ala Asp Leu	
370 375 380	
cta aaa cat gag gcc ctg aac ccg ccc aga gag gat cag cca cgc tgt	1560
Leu Lys His Glu Ala Leu Asn Pro Pro Arg Glu Asp Gln Pro Arg Cys	
385 390 395	
acg agt ctg gac tct gcc ctc ttg gag cgc aag agg ctg ctg agt agg	1608
Thr Ser Leu Asp Ser Ala Leu Leu Glu Arg Lys Arg Leu Leu Ser Arg	
400 405 410	
aag gag ctg gaa ctt cct gag aac att gct gat tct tcg tgc aca gga	1656
Lys Glu Leu Glu Leu Pro Glu Asn Ile Ala Asp Ser Ser Cys Thr Gly	
415 420 425 430	
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Ser Thr Glu Glu Ser Glu Met Leu Lys Arg Gln Arg Ser Leu Tyr Ile	
435 440 445	
gac ctc ggc gct ctg gct ggc tac ttc aat ctt gtt cgg gga cca cca	1752
Asp Leu Gly Ala Leu Ala Gly Tyr Phe Asn Leu Val Arg Gly Pro Pro	
450 455 460	
acg ctt gaa tat ggc tga aggatgccat gtttgcctct aaattaagac	1800
Thr Leu Glu Tyr Gly *	
465	
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tcaggtgacg tgattctaag gcaggaattt gagagttcac agaaggatcg tgtctgctga	2040
ctgtttcatt cactgtgcac tttgctcaaa attttaaaaa taccaatcac aaggataata	2100
gagtagccta aaattactat tcttggttct tatttaagta tggaatatc attttactca	2160



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 <212> PRT  
 <213> Homo Sapiens

<400> 106

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			20					25					30		
Leu	Tyr	Ala	Ser	Glu	Glu	Pro	Ala	Val	Tyr	Glu	Pro	Ser	Leu	Met	Thr
		35					40					45			
Met	Cys	Gln	Asp	Ser	Asn	Gln	Asn	Asp	Glu	Arg	Ser	Lys	Ser	Leu	Leu
	50					55				60					
Leu	Ser	Gly	Gln	Glu	Val	Pro	Trp	Leu	Ser	Ser	Val	Arg	Tyr	Gly	Thr
65					70					75					80
Val	Glu	Asp	Leu	Leu	Ala	Phe	Ala	Asn	His	Ile	Ser	Asn	Thr	Ala	Lys
			85					90						95	
His	Phe	Tyr	Gly	Gln	Arg	Pro	Gln	Glu	Ser	Gly	Ile	Leu	Leu	Asn	Met
			100					105					110		
Val	Ile	Thr	Pro	Gln	Asn	Gly	Arg	Tyr	Gln	Ile	Asp	Ser	Asp	Val	Leu
		115					120				125				
Leu	Ile	Pro	Trp	Lys	Leu	Thr	Tyr	Arg	Asn	Ile	Gly	Ser	Asp	Phe	Ile
	130					135					140				
Pro	Arg	Gly	Ala	Phe	Gly	Lys	Val	Tyr	Leu	Ala	Gln	Asp	Ile	Lys	Thr
145					150					155					160
Lys	Lys	Arg	Met	Ala	Cys	Lys	Leu	Ile	Pro	Val	Asp	Gln	Phe	Lys	Pro
			165					170						175	
Ser	Asp	Val	Glu	Ile	Gln	Ala	Cys	Phe	Arg	His	Glu	Asn	Ile	Ala	Glu
		180						185					190		
Leu	Tyr	Gly	Ala	Val	Leu	Trp	Gly	Glu	Thr	Val	His	Leu	Phe	Met	Glu
	195						200					205			
Ala	Gly	Glu	Gly	Gly	Ser	Val	Leu	Glu	Lys	Leu	Glu	Ser	Cys	Gly	Pro
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Met	Arg	Glu	Phe	Glu	Ile	Trp	Val	Thr	Lys	His	Val	Leu	Lys	Gly	
225					230				235					240	
Leu	Asp	Phe	Leu	His	Ser	Lys	Lys	Val	Ile	His	His	Asp	Ile	Lys	Pro
			245						250					255	
Ser	Asn	Ile	Val	Phe	Met	Ser	Thr	Lys	Ala	Val	Leu	Val	Asp	Phe	Gly
		260						265					270		
Leu	Ser	Val	Gln	Met	Thr	Glu	Asp	Val	Tyr	Phe	Pro	Lys	Asp	Leu	Arg
	275						280					285			
Gly	Thr	Glu	Ile	Tyr	Met	Ser	Pro	Glu	Val	Ile	Leu	Cys	Arg	Gly	His
	290					295					300				
Ser	Thr	Lys	Ala	Asp	Ile	Tyr	Ser	Leu	Gly	Ala	Thr	Leu	Ile	His	Met
305					310					315					320
Gln	Thr	Gly	Thr	Pro	Pro	Trp	Val	Lys	Arg	Tyr	Pro	Arg	Ser	Ala	Tyr
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Pro	Ser	Tyr	Leu	Tyr	Ile	Ile	His	Lys	Gln	Ala	Pro	Pro	Leu	Glu	Asp
		340						345					350		

Ile Ala Asp Asp Cys Ser Pro Gly Met Arg Glu Leu Ile Glu Ala Ser  
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 370 375 380  
 His Glu Ala Leu Asn Pro Pro Arg Glu Asp Gln Pro Arg Cys Thr Ser  
 385 390 395 400  
 Leu Asp Ser Ala Leu Leu Glu Arg Lys Arg Leu Leu Ser Arg Lys Glu  
 405 410 415  
 Leu Glu Leu Pro Glu Asn Ile Ala Asp Ser Ser Cys Thr Gly Ser Thr  
 420 425 430  
 Glu Glu Ser Glu Met Leu Lys Arg Gln Arg Ser Leu Tyr Ile Asp Leu  
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 Glu Tyr Ile Lys Asn Trp Arg Pro Arg Tyr Phe Leu Leu Lys Thr Asp  
 20 25 30  
 ggc tca ttc ata gga tat aaa gag aaa cct caa gat gtg gat tta cct 144  
 Gly Ser Phe Ile Gly Tyr Lys Glu Lys Pro Gln Asp Val Asp Leu Pro  
 35 40 45  
 tat ccc ctc aac aac ttt tca gtg gca aaa tgc cag tta atg aaa aca 192  
 Tyr Pro Leu Asn Asn Phe Ser Val Ala Lys Cys Gln Leu Met Lys Thr  
 50 55 60  
 gaa cga cca aag cca aac aca ttt ata atc aga tgt ctc cag tgg act 240  
 Glu Arg Pro Lys Pro Asn Thr Phe Ile Ile Arg Cys Leu Gln Trp Thr  
 65 70 75 80  
 act gtt ata gag aga aca ttt cat gta gat act cca gag gaa agg gaa 288  
 Thr Val Ile Glu Arg Thr Phe His Val Asp Thr Pro Glu Glu Arg Glu  
 85 90 95  
 gaa tgg aca gaa gct atc cag gct gta gca gac aga ctg cag agg caa 336  
 Glu Trp Thr Glu Ala Ile Gln Ala Val Ala Asp Arg Leu Gln Arg Gln  
 100 105 110  
 gaa gag gag aga atg aat tgt agt cca act tca caa att gat aat ata 384  
 Glu Glu Glu Arg Met Asn Cys Ser Pro Thr Ser Gln Ile Asp Asn Ile  
 115 120 125  
 gga gag gaa gag atg gat gcc tct aca acc cat cat aaa aga aag aca 432  
 Gly Glu Glu Glu Met Asp Ala Ser Thr Thr His His Lys Arg Lys Thr

130	135	140	
atg aat gat ttt gac tat ttg aaa cta cta ggt aaa ggc act ttt ggg Met Asn Asp Phe Asp Tyr Leu Lys Leu Leu Gly Lys Gly Thr Phe Gly 145 150 155 160			480
aaa gtt att ttg gtt cga gag aag gca agt gga aaa tac tat gct atg Lys Val Ile Leu Val Arg Glu Lys Ala Ser Gly Lys Tyr Tyr Ala Met 165 170 175			528
aag att ctg aag aaa gaa gtc att att gca aag gat gaa gtg gca cac Lys Ile Leu Lys Lys Glu Val Ile Ile Ala Lys Asp Glu Val Ala His 180 185 190			576
act cta act gaa agc aga gta tta aag aac act aga cat ccc ttt tta Thr Leu Thr Glu Ser Arg Val Leu Lys Asn Thr Arg His Pro Phe Leu 195 200 205			624
aca tcc ttg aaa tat tcc ttc cag aca aaa gac cgt ttg tgt ttt gtg Thr Ser Leu Lys Tyr Ser Phe Gln Thr Lys Asp Arg Leu Cys Phe Val 210 215 220			672
atg gaa tat gtt aat ggg ggc gag ctg ttt ttc cat ttg tcg aga gag Met Glu Tyr Val Asn Gly Gly Glu Leu Phe Phe His Leu Ser Arg Glu 225 230 235 240			720
cgg gtg ttc tct gag gac cgc aca cgt ttc tat ggt gca gaa att gtc Arg Val Phe Ser Glu Asp Arg Thr Arg Phe Tyr Gly Ala Glu Ile Val 245 250 255			768
tct gcc ttg gac tat cta cat tcc gga aag att gtg tac cgt gat ctc Ser Ala Leu Asp Tyr Leu His Ser Gly Lys Ile Val Tyr Arg Asp Leu 260 265 270			816
aag ttg gag aat cta atg ctg gac aaa gat ggc cac ata aaa att aca Lys Leu Glu Asn Leu Met Leu Asp Lys Asp Gly His Ile Lys Ile Thr 275 280 285			864
gat ttt gga ctt tgc aaa gaa ggg atc aca gat gca gcc acc atg aag Asp Phe Gly Leu Cys Lys Glu Gly Ile Thr Asp Ala Ala Thr Met Lys 290 295 300			912
aca ttc tgt ggc act cca gaa tat ctg gca cca gag gtg tta gaa gat Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val Leu Glu Asp 305 310 315 320			960
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tat gaa atg atg tgt ggg agg tta cct ttc tac aac cag gac cat gag Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr Asn Gln Asp His Glu 340 345 350			1056
aaa ctt ttt gaa tta ata tta atg gaa gac att aaa ttt cct cga aca Lys Leu Phe Glu Leu Ile Leu Met Glu Asp Ile Lys Phe Pro Arg Thr 355 360 365			1104
ctc tct tca gat gca aaa tca ttg ctt tca ggg ctc ttg ata aag gat Leu Ser Ser Asp Ala Lys Ser Leu Leu Ser Gly Leu Leu Ile Lys Asp 370 375 380			1152

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aga cac agt ttc ttc tct gga gta aac tgg caa gat gta tat gat aaa 1248  
 Arg His Ser Phe Phe Ser Gly Val Asn Trp Gln Asp Val Tyr Asp Lys  
 405 410 415

aag ctt gta cct cct ttt aaa cct caa gta aca tct gag aca gat act 1296  
 Lys Leu Val Pro Pro Phe Lys Pro Gln Val Thr Ser Glu Thr Asp Thr  
 420 425 430

aga tat ttt gat gaa gaa ttt aca gct cag act att aca ata aca cca 1344  
 Arg Tyr Phe Asp Glu Glu Phe Thr Ala Gln Thr Ile Thr Ile Thr Pro  
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cct gaa aaa tat gat gag gat ggt atg gac tgc atg gac aat gag agg 1392  
 Pro Glu Lys Tyr Asp Glu Asp Gly Met Asp Cys Met Asp Asn Glu Arg  
 450 455 460

cgg ccg cat ttc cct caa ttt tcc tac tct gca agt gga cga gaa taa 1440  
 Arg Pro His Phe Pro Gln Phe Ser Tyr Ser Ala Ser Gly Arg Glu \*  
 465 470 475

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 <213> Homo Sapiens

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 Gly Ser Phe Ile Gly Tyr Lys Glu Lys Pro Gln Asp Val Asp Leu Pro  
 35 40 45  
 Tyr Pro Leu Asn Asn Phe Ser Val Ala Lys Cys Gln Leu Met Lys Thr  
 50 55 60

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Glu	Trp	Thr	Glu	Ala	Ile	Gln	Ala	Val	Ala	Asp	Arg	Leu	Gln	Arg	Gln				
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Glu	Glu	Glu	Arg	Met	Asn	Cys	Ser	Pro	Thr	Ser	Gln	Ile	Asp	Asn	Ile				
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Gly	Glu	Glu	Glu	Met	Asp	Ala	Ser	Thr	Thr	His	His	Lys	Arg	Lys	Thr				
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Lys	Ile	Leu	Lys	Lys	Glu	Val	Ile	Ile	Ala	Lys	Asp	Glu	Val	Ala	His				
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<211> 3941

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (213)...(1748)

<221> misc\_feature

<222> (1)...(3941)

<223> n = A,T,C or G

<400> 109

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ccacccttaa atctgtaggt tttcactccc ccactctcct ttgcagtccc gtggagtctc 180
catctgagcc ctttcttagt ccaggcatcc cg atg ttg gtg gat ggc cca tct 233
                               Met Leu Val Asp Gly Pro Ser
                               1           5
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gag cgg cca gcc ctg tgc ttc ttg ctg ttg gct gtg gca atg tct ttc 281
Glu Arg Pro Ala Leu Cys Phe Leu Leu Leu Ala Val Ala Met Ser Phe
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ttc ggc tca gct cta tcc ata gat gaa aca cgg gcg cat ctg ttg ttg 329
Phe Gly Ser Ala Leu Ser Ile Asp Glu Thr Arg Ala His Leu Leu Leu
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aaa gaa aag atg atg cgg ctc ggg ggg cgg ctg gtg ctg aac acc aag 377
Lys Glu Lys Met Met Arg Leu Gly Gly Arg Leu Val Leu Asn Thr Lys
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```

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gag gag ctg gcc aat gag agg ctc atg acg ctc aaa atc gct gag atg 425
Glu Glu Leu Ala Asn Glu Arg Leu Met Thr Leu Lys Ile Ala Glu Met
                60                65                70
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```
aag gag gcc atg agg acc ctg ata ttc cca ccc agc atg cac ttt ttc 473
Lys Glu Ala Met Arg Thr Leu Ile Phe Pro Pro Ser Met His Phe Phe
                75                80                85
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cag gcc aag cat ctc att gag aga agt caa gtg ttt aat att cta agg 521
Gln Ala Lys His Leu Ile Glu Arg Ser Gln Val Phe Asn Ile Leu Arg
                90                95                100
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atg atg cca aaa ggg gct gcc ttg cac ctc cat gac att ggc atc gtg 569
Met Met Pro Lys Gly Ala Leu His Leu His Asp Ile Gly Ile Val
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act atg gac tgg ctg gtg agg aat gtc acc tac agg cct cac tgc cac 617
Thr Met Asp Trp Leu Val Arg Asn Val Thr Tyr Arg Pro His Cys His
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Ile Cys Phe Thr Pro Arg Gly Ile Met Gln Phe Arg Phe Ala His Pro
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Thr Pro Arg Pro Ser Glu Lys Cys Ser Lys Trp Ile Leu Leu Glu Asp
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Tyr Arg Lys Arg Val Gln Asn Val Thr Glu Phe Asp Asp Ser Leu Leu
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agg aat ttc act ctg gtg acc cag cac ccg gag gtg att tac aca aac 809
Arg Asn Phe Thr Leu Val Thr Gln His Pro Glu Val Ile Tyr Thr Asn
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caa aat gtt gtc tgg tcg aaa ttt gaa acc atc ttc ttc acc atc tct 857
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Gly	Leu	Ile	His	Tyr 220	Ala	Pro	Val	Phe	Arg 225	Asp	Tyr	Val	Phe	Arg 230	Ser	
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Met	Gln	Glu	Phe 235	Tyr	Glu	Asp	Asn	Val 240	Leu	Tyr	Met	Glu	Ile 245	Arg	Ala	
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Trp 265	Ser	Val	Lys	Thr	Tyr	Gln 270	Glu	Val	Ala	Gln 275	Lys	Phe	Val	Glu	Thr	
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His 280	Pro	Glu	Phe	Ile	Gly 285	Ile	Lys	Ile	Ile	Tyr 290	Ser	Asp	His	Arg	Ser 295	
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Lys	Asp	Val	Ala 300	Val	Ile	Ala	Glu	Ser	Ile 305	Arg	Met	Ala	Met	Gly 310	Leu	
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Cys	Pro 410	Ile	Ser	Asn	Gln	Val	Leu 415	Lys	Leu	Val	Ser	Asp 420	Leu	Arg	Asn	
cac	cct	gta	gcc	act	ctg	atg	gcc	act	ggg	cac	ccc	atg	gtg	atc	agc	1529
His 425	Pro	Val	Ala	Thr	Leu	Met 430	Ala	Thr	Gly	His 435	Pro	Met	Val	Ile	Ser	
tct	gat	gac	cca	gct	atg	ttt	ggc	gcc	aaa	ggc	ttg	tcc	tat	gat	ttc	1577
Ser 440	Asp	Asp	Pro	Ala	Met 445	Phe	Gly	Ala	Lys 450	Gly	Leu	Ser	Tyr	Asp	Phe 455	

tat gag gtc ttc atg ggc att ggg ggg atg aag gct gac ctg agg acc	1625
Tyr Glu Val Phe Met Gly Ile Gly Gly Met Lys Ala Asp Leu Arg Thr	
460 465 470	

ctc aaa cag ctg gcc atg aac tct atc aag tac agt acc ctg ttg gag	1673
Leu Lys Gln Leu Ala Met Asn Ser Ile Lys Tyr Ser Thr Leu Leu Glu	
475 480 485	

agt gag aaa aat act ttc atg gaa atc tgg aag aag aga tgg gat aag	1721
Ser Glu Lys Asn Thr Phe Met Glu Ile Trp Lys Lys Arg Trp Asp Lys	
490 495 500	

ttc ata gca gat gtg gct aca aag tga ggagaagcta gccagccctc	1768
Phe Ile Ala Asp Val Ala Thr Lys *	
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 <212> PRT  
 <213> Homo Sapiens

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Thr	Arg	Ala	His	Leu	Leu	Leu	Lys	Glu	Lys	Met	Met	Arg	Leu	Gly
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Arg	Leu	Val	Leu	Asn	Thr	Lys	Glu	Glu	Leu	Ala	Asn	Glu	Arg	Leu
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Thr	Leu	Lys	Ile	Ala	Glu	Met	Lys	Glu	Ala	Met	Arg	Thr	Leu	Ile
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Pro	Pro	Ser	Met	His	Phe	Phe	Gln	Ala	Lys	His	Leu	Ile	Glu	Arg
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Gln	Val	Phe	Asn	Ile	Leu	Arg	Met	Met	Pro	Lys	Gly	Ala	Ala	Leu
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Leu	His	Asp	Ile	Gly	Ile	Val	Thr	Met	Asp	Trp	Leu	Val	Arg	Asn
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Thr	Tyr	Arg	Pro	His	Cys	His	Ile	Cys	Phe	Thr	Pro	Arg	Gly	Ile
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Gln	Phe	Arg	Phe	Ala	His	Pro	Thr	Pro	Arg	Pro	Ser	Glu	Lys	Cys
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Lys	Trp	Ile	Leu	Leu	Glu	Asp	Tyr	Arg	Lys	Arg	Val	Gln	Asn	Val
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Glu	Phe	Asp	Asp	Ser	Leu	Leu	Arg	Asn	Phe	Thr	Leu	Val	Thr	Gln
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Pro	Glu	Val	Ile	Tyr	Thr	Asn	Gln	Asn	Val	Val	Trp	Ser	Lys	Phe
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Arg	Asp	Tyr	Val	Phe	Arg	Ser	Met	Gln	Glu	Phe	Tyr	Glu	Asp	Asn
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Gly	Phe	Asp	Leu	Val	Gly	His	Glu	Asp	Thr	Gly	His	Ser	Leu	Arg
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Tyr	Lys	Glu	Ala	Leu	Met	Ile	Pro	Ala	Lys	Asp	Gly	Val	Lys	Leu
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Tyr	Phe	Phe	His	Ala	Gly	Glu	Thr	Asp	Trp	Gln	Gly	Thr	Ser	Ile
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Arg	Asn	Ile	Leu	Asp	Ala	Leu	Met	Leu	Asn	Thr	Thr	Arg	Ile	Gly
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Lys	Asp	Ile	Pro	Ile	Glu	Val	Cys	Pro	Ile	Ser	Asn	Gln	Val	Leu
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Leu	Val	Ser	Asp	Leu	Arg	Asn	His	Pro	Val	Ala	Thr	Leu	Met	Ala
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Gly	His	Pro	Met	Val	Ile	Ser	Ser	Asp	Asp	Pro	Ala	Met	Phe	Gly
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Lys	Gly	Leu	Ser	Tyr	Asp	Phe	Tyr	Glu	Val	Phe	Met	Gly	Ile	Gly
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Met	Lys	Ala	Asp	Leu	Arg	Thr	Leu	Lys	Gln	Leu	Ala	Met	Asn	Ser
465					470					475				Ile
Lys	Tyr	Ser	Thr	Leu	Leu	Glu	Ser	Glu	Lys	Asn	Thr	Phe	Met	Glu
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500

505

510

<210> 111  
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 <222> (61)...(1905)

<400> 111

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gtg aag gat cgg ggc caa tgg acc aac aag atg gag ttt gtg ctg tca 204
Val Lys Asp Arg Gly Gln Trp Thr Asn Lys Met Glu Phe Val Leu Ser
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gtg gcc ggg gag atc att ggg ctg ggc aat gtc tgg agg ttt ccc tat 252
Val Ala Gly Glu Ile Ile Gly Leu Gly Asn Val Trp Arg Phe Pro Tyr
          50           55           60

ctc tgc tac aaa aac gga ggt gga gcc ttc ttc atc ccc tac ttc atc 300
Leu Cys Tyr Lys Asn Gly Gly Gly Ala Phe Phe Ile Pro Tyr Phe Ile
          65           70           75           80

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Phe Phe Phe Val Cys Gly Ile Pro Val Phe Phe Leu Glu Val Ala Leu
          85           90           95

ggc caa tac acc agc caa ggg agt gtc aca gcc tgg agg aag atc tgc 396
Gly Gln Tyr Thr Ser Gln Gly Ser Val Thr Ala Trp Arg Lys Ile Cys
          100          105          110

ccc ctc ttc cag ggc att ggt ctg gca tct gtg gtc atc gag tca tat 444
Pro Leu Phe Gln Gly Ile Gly Leu Ala Ser Val Val Ile Glu Ser Tyr
          115          120          125

ttg aat gtc tac tac atc atc atc ctt gcc tgg gct ctc ttc tac ctg 492
Leu Asn Val Tyr Tyr Ile Ile Ile Leu Ala Trp Ala Leu Phe Tyr Leu
          130          135          140

ttc agc tcc ttc acc tct gag ctg ccc tgg acg acc tgc aac aac ttt 540
Phe Ser Ser Phe Thr Ser Glu Leu Pro Trp Thr Thr Cys Asn Asn Phe
          145          150          155          160

tgg aac aca gag cat tgc acg gac ttt ctg aac cac tca gga gcc ggc 588
Trp Asn Thr Glu His Cys Thr Asp Phe Leu Asn His Ser Gly Ala Gly
          165          170          175

aca gtg acc cca ttt gag aat ttt acc tca cct gtc atg gaa ttc tgg 636
Thr Val Thr Pro Phe Glu Asn Phe Thr Ser Pro Val Met Glu Phe Trp
          180          185          190

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gag aga cga gtt ctg ggc atc acc tcg ggc atc cat gac ctg ggc tcc	684
Glu Arg Arg Val Leu Gly Ile Thr Ser Gly Ile His Asp Leu Gly Ser	
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ctg cgc tgg gag ctg gcc ctg tgc ctc ctg ctc gcc tgg gtc atc tgc	732
Leu Arg Trp Glu Leu Ala Leu Cys Leu Leu Leu Ala Trp Val Ile Cys	
210 215 220	
tat ttc tgc atc tgg aag ggg gtc aag tcc aca ggc aag gtg gtt tat	780
Tyr Phe Cys Ile Trp Lys Gly Val Lys Ser Thr Gly Lys Val Val Tyr	
225 230 235 240	
ttc àca gcc acg ttt ccg tac ctg atg ctt gtc att ttg ctg atc aga	828
Phe Thr Ala Thr Phe Pro Tyr Leu Met Leu Val Ile Leu Leu Ile Arg	
245 250 255	
ggt gtc acc ctt ccc gga gcc tac cag ggc atc atc tac tac ttg aag	876
Gly Val Thr Leu Pro Gly Ala Tyr Gln Gly Ile Ile Tyr Tyr Leu Lys	
260 265 270	
cca gat ttg ttc cgc ctc aag gac cct cag gtg tgg atg gat gcg ggc	924
Pro Asp Leu Phe Arg Leu Lys Asp Pro Gln Val Trp Met Asp Ala Gly	
275 280 285	
acc cag atc ttc ttc tcc ttt gcc atc tgc cag ggg tgc ctg aca gcc	972
Thr Gln Ile Phe Phe Ser Phe Ala Ile Cys Gln Gly Cys Leu Thr Ala	
290 295 300	
ctg ggc agc tac aac aag tat cac aac aac tgc tac aag gac tgc atc	1020
Leu Gly Ser Tyr Asn Lys Tyr His Asn Asn Cys Tyr Lys Asp Cys Ile	
305 310 315 320	
gcc ctc tgc ttc ctg aac agt gcc acc agc ttt gtg gct ggg ttt gtt	1068
Ala Leu Cys Phe Leu Asn Ser Ala Thr Ser Phe Val Ala Gly Phe Val	
325 330 335	
gtc ttc tcc atc ctg ggc ttc atg tcc caa gag caa ggg gtg ccc att	1116
Val Phe Ser Ile Leu Gly Phe Met Ser Gln Glu Gln Gly Val Pro Ile	
340 345 350	
tct gaa gtg gcc gag tca ggt cct ggg ctg gcc ttc atc gcc ttc ccc	1164
Ser Glu Val Ala Glu Ser Gly Pro Gly Leu Ala Phe Ile Ala Phe Pro	
355 360 365	
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Lys Ala Val Thr Met Met Pro Leu Ser Gln Leu Trp Ser Cys Leu Phe	
370 375 380	
ttt atc atg ctc ata ttc cta ggg ctg gac agc cag ttt gtc tgt gtg	1260
Phe Ile Met Leu Ile Phe Leu Gly Leu Asp Ser Gln Phe Val Cys Val	
385 390 395 400	
gag tgc ctg gtg aca gcc tcc ata gac atg ttc ccc agg cag ctc cgg	1308
Glu Cys Leu Val Thr Ala Ser Ile Asp Met Phe Pro Arg Gln Leu Arg	
405 410 415	
aag agc ggg cgg cgc gag ctc ctc atc ctc acc atc gcc gtc atg tgc	1356
Lys Ser Gly Arg Arg Glu Leu Leu Ile Leu Thr Ile Ala Val Met Cys	
420 425 430	
tac ctg ata ggg ctt ttc ctg gtc acc gag ggc ggg atg tac atc ttc	1404
Tyr Leu Ile Gly Leu Phe Leu Val Thr Glu Gly Gly Met Tyr Ile Phe	

435	440	445	
cag ctg ttt gac tac tat gct tcc agt ggc ata tgc ctg ctg ttc ctg Gln Leu Phe Asp Tyr Tyr Ala Ser Ser Gly Ile Cys Leu Leu Phe Leu 450 455 460			1452
tca ttg ttt gaa gtg gtc tgc ata agc tgg gtg tat ggg gcg gac cgt Ser Leu Phe Glu Val Val Cys Ile Ser Trp Val Tyr Gly Ala Asp Arg 465 470 475 480			1500
ttc tat gac aac att gag gac atg att ggc tac cgg cca tgg ccc ctg Phe Tyr Asp Asn Ile Glu Asp Met Ile Gly Tyr Arg Pro Trp Pro Leu 485 490 495			1548
gtg aag atc tcc tgg ctc ttc ctg acc cct gga ctt tgc ctg gcc act Val Lys Ile Ser Trp Leu Phe Leu Thr Pro Gly Leu Cys Leu Ala Thr 500 505 510			1596
ttc ctc ttc tcc ttg agc aag tac acc ccc ctc aag tac aac aac gtc Phe Leu Phe Ser Leu Ser Lys Tyr Thr Pro Leu Lys Tyr Asn Asn Val 515 520 525			1644
tat gtg tac ccg ccc tgg gga tac tcc att ggc tgg ttc ctg gct ctg Tyr Val Tyr Pro Pro Trp Gly Tyr Ser Ile Gly Trp Phe Leu Ala Leu 530 535 540			1692
tcc tcc atg gtc tgt gtc cca ctc ttc gtc gtc atc acc ctc ctg aag Ser Ser Met Val Cys Val Pro Leu Phe Val Val Ile Thr Leu Leu Lys 545 550 555 560			1740
act cgg ggt cct ttc agg aag cgt ctg cgt cag ctc atc acc cct gac Thr Arg Gly Pro Phe Arg Lys Arg Leu Arg Gln Leu Ile Thr Pro Asp 565 570 575			1788
tcc agt ctg cca cag ccc aag caa cat ccc tgc ttg gat ggc agt gct Ser Ser Leu Pro Gln Pro Lys Gln His Pro Cys Leu Asp Gly Ser Ala 580 585 590			1836
ggc cgg aac ttt ggg ccc tcc cca aca agg gaa gga ctg ata gcc ggg Gly Arg Asn Phe Gly Pro Ser Pro Thr Arg Glu Gly Leu Ile Ala Gly 595 600 605			1884
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 <213> Homo Sapiens

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 20 25 30  
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 35 40 45  
 Val Ala Gly Glu Ile Ile Gly Leu Gly Asn Val Trp Arg Phe Pro Tyr  
 50 55 60  
 Leu Cys Tyr Lys Asn Gly Gly Gly Ala Phe Phe Ile Pro Tyr Phe Ile

65					70					75				80
Phe	Phe	Phe	Val	Cys	Gly	Ile	Pro	Val	Phe	Phe	Leu	Glu	Val	Ala
				85					90					95
Gly	Gln	Tyr	Thr	Ser	Gln	Gly	Ser	Val	Thr	Ala	Trp	Arg	Lys	Ile
			100					105					110	Cys
Pro	Leu	Phe	Gln	Gly	Ile	Gly	Leu	Ala	Ser	Val	Val	Ile	Glu	Ser
		115					120					125		Tyr
Leu	Asn	Val	Tyr	Tyr	Ile	Ile	Ile	Leu	Ala	Trp	Ala	Leu	Phe	Tyr
	130					135					140			Leu
Phe	Ser	Ser	Phe	Thr	Ser	Glu	Leu	Pro	Trp	Thr	Thr	Cys	Asn	Asn
	145				150					155				Phe
Trp	Asn	Thr	Glu	His	Cys	Thr	Asp	Phe	Leu	Asn	His	Ser	Gly	Ala
				165					170					Gly
Thr	Val	Thr	Pro	Phe	Glu	Asn	Phe	Thr	Ser	Pro	Val	Met	Glu	Phe
			180					185					190	Trp
Glu	Arg	Arg	Val	Leu	Gly	Ile	Thr	Ser	Gly	Ile	His	Asp	Leu	Gly
	195						200					205		Ser
Leu	Arg	Trp	Glu	Leu	Ala	Leu	Cys	Leu	Leu	Leu	Ala	Trp	Val	Ile
	210					215					220			Cys
Tyr	Phe	Cys	Ile	Trp	Lys	Gly	Val	Lys	Ser	Thr	Gly	Lys	Val	Val
	225				230					235				Tyr
Phe	Thr	Ala	Thr	Phe	Pro	Tyr	Leu	Met	Leu	Val	Ile	Leu	Leu	Ile
				245					250					Arg
Gly	Val	Thr	Leu	Pro	Gly	Ala	Tyr	Gln	Gly	Ile	Ile	Tyr	Tyr	Leu
			260				265					270		Lys
Pro	Asp	Leu	Phe	Arg	Leu	Lys	Asp	Pro	Gln	Val	Trp	Met	Asp	Ala
	275						280					285		Gly
Thr	Gln	Ile	Phe	Phe	Ser	Phe	Ala	Ile	Cys	Gln	Gly	Cys	Leu	Thr
	290				295						300			Ala
Leu	Gly	Ser	Tyr	Asn	Lys	Tyr	His	Asn	Asn	Cys	Tyr	Lys	Asp	Cys
	305				310					315				Ile
Ala	Leu	Cys	Phe	Leu	Asn	Ser	Ala	Thr	Ser	Phe	Val	Ala	Gly	Phe
			325						330				335	Val
Val	Phe	Ser	Ile	Leu	Gly	Phe	Met	Ser	Gln	Glu	Gln	Gly	Val	Pro
			340					345					350	Ile
Ser	Glu	Val	Ala	Glu	Ser	Gly	Pro	Gly	Leu	Ala	Phe	Ile	Ala	Phe
	355						360					365		Pro
Lys	Ala	Val	Thr	Met	Met	Pro	Leu	Ser	Gln	Leu	Trp	Ser	Cys	Leu
	370					375					380			Phe
Phe	Ile	Met	Leu	Ile	Phe	Leu	Gly	Leu	Asp	Ser	Gln	Phe	Val	Cys
	385				390				395					Val
Glu	Cys	Leu	Val	Thr	Ala	Ser	Ile	Asp	Met	Phe	Pro	Arg	Gln	Leu
			405					410					415	Arg
Lys	Ser	Gly	Arg	Arg	Glu	Leu	Leu	Ile	Leu	Thr	Ile	Ala	Val	Met
			420					425					430	Cys
Tyr	Leu	Ile	Gly	Leu	Phe	Leu	Val	Thr	Glu	Gly	Gly	Met	Tyr	Ile
	435						440					445		Phe
Gln	Leu	Phe	Asp	Tyr	Tyr	Ala	Ser	Ser	Gly	Ile	Cys	Leu	Leu	Phe
	450					455					460			Leu
Ser	Leu	Phe	Glu	Val	Val	Cys	Ile	Ser	Trp	Val	Tyr	Gly	Ala	Asp
	465				470				475					Arg
Phe	Tyr	Asp	Asn	Ile	Glu	Asp	Met	Ile	Gly	Tyr	Arg	Pro	Trp	Pro
			485						490					Leu
Val	Lys	Ile	Ser	Trp	Leu	Phe	Leu	Thr	Pro	Gly	Leu	Cys	Leu	Ala
			500					505					510	Thr
Phe	Leu	Phe	Ser	Leu	Ser	Lys	Tyr	Thr	Pro	Leu	Lys	Tyr	Asn	Asn
	515						520					525		Val
Tyr	Val	Tyr	Pro	Pro	Trp	Gly	Tyr	Ser	Ile	Gly	Trp	Phe	Leu	Ala
	530					535				540				Leu
Ser	Ser	Met	Val	Cys	Val	Pro	Leu	Phe	Val	Val	Ile	Thr	Leu	Leu
	545				550				555					Lys
Thr	Arg	Gly	Pro	Phe	Arg	Lys	Arg	Leu	Arg	Gln	Leu	Ile	Thr	Pro
														Asp

				565					570					575			
Ser	Ser	Leu	Pro	Gln	Pro	Lys	Gln	His	Pro	Cys	Leu	Asp	Gly	Ser	Ala		
			580					585					590				
Gly	Arg	Asn	Phe	Gly	Pro	Ser	Pro	Thr	Arg	Glu	Gly	Leu	Ile	Ala	Gly		
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Glu	Lys	Glu	Thr	His	Leu												
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 <222> (11)...(898)

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	1				5					10							
gcg	gcc	gaa	ggg	ctc	ccg	gac	cag	tac	gcg	gac	ggg	gag	gcg	gcg	cgc		97
Ala	Ala	Glu	Gly	Leu	Pro	Asp	Gln	Tyr	Ala	Asp	Gly	Glu	Ala	Ala	Arg		
	15					20					25						
gtg	tgg	cag	ctg	tat	atc	gga	gac	acc	cgc	agc	cgc	acc	gcc	gag	tac		145
Val	Trp	Gln	Leu	Tyr	Ile	Gly	Asp	Thr	Arg	Ser	Arg	Thr	Ala	Glu	Tyr		
	30				35					40					45		
aag	gca	tgg	ctg	ctt	ggg	ctg	ctg	cgc	cag	cac	ggc	tgc	cag	cgg	gtg		193
Lys	Ala	Trp	Leu	Leu	Gly	Leu	Leu	Arg	Gln	His	Gly	Cys	Gln	Arg	Val		
				50					55					60			
ctc	gac	gta	gcc	tgt	ggc	act	ggg	gtg	gac	tcc	att	atg	ctg	gtg	gaa		241
Leu	Asp	Val	Ala	Cys	Gly	Thr	Gly	Val	Asp	Ser	Ile	Met	Leu	Val	Glu		
			65					70					75				
gag	ggc	ttc	agt	gtg	acg	agt	gtg	gat	gcc	agt	gac	aag	atg	ctg	aag		289
Glu	Gly	Phe	Ser	Val	Thr	Ser	Val	Asp	Ala	Ser	Asp	Lys	Met	Leu	Lys		
		80						85				90					
tat	gca	ctt	aag	gag	cgc	tgg	aac	cgg	cgg	cac	gag	ccc	gcc	ttc	gac		337
Tyr	Ala	Leu	Lys	Glu	Arg	Trp	Asn	Arg	Arg	His	Glu	Pro	Ala	Phe	Asp		
		95				100					105						
aag	tgg	gtc	atc	gaa	gaa	gcc	aac	tgg	atg	act	ctg	gac	aaa	gat	gtg		385
Lys	Trp	Val	Ile	Glu	Glu	Ala	Asn	Trp	Met	Thr	Leu	Asp	Lys	Asp	Val		
	110				115					120					125		
ccc	cag	tca	gca	gag	ggg	ggc	ttt	gat	gct	gtc	atc	tgc	ctt	gga	aac		433
Pro	Gln	Ser	Ala	Glu	Gly	Gly	Phe	Asp	Ala	Val	Ile	Cys	Leu	Gly	Asn		
				130					135					140			
agt	ttc	gct	cac	ttg	cca	gac	tgc	aaa	ggg	gac	cag	agt	gag	cac	cgg		481
Ser	Phe	Ala	His	Leu	Pro	Asp	Cys	Lys	Gly	Asp	Gln	Ser	Glu	His	Arg		
			145					150					155				
ctg	gcg	ctg	aaa	aac	att	gcg	agc	atg	gtg	cgg	gca	ggg	ggc	cta	ctg		529
Leu	Ala	Leu	Lys	Asn	Ile	Ala	Ser	Met	Val	Arg	Ala	Gly	Gly	Leu	Leu		
		160					165						170				

gtc att gat cat cgc aac tac gac cac atc ctc agt aca ggc tgt gca 577  
 Val Ile Asp His Arg Asn Tyr Asp His Ile Leu Ser Thr Gly Cys Ala  
 175 180 185

ccc cca ggg aag aac atc tac tat aag agt gac ttg acc aag gac gtc 625  
 Pro Pro Gly Lys Asn Ile Tyr Tyr Lys Ser Asp Leu Thr Lys Asp Val  
 190 195 200 205

aca aca tca gtg ctg ata gtg aac aac aag gcc cac atg gtg acc ctg 673  
 Thr Thr Ser Val Leu Ile Val Asn Asn Lys Ala His Met Val Thr Leu  
 210 215 220

gac tat acg gtg cag gtg ccg ggg gct ggc cag gat ggc tct cct ggc 721  
 Asp Tyr Thr Val Gln Val Pro Gly Ala Gly Gln Asp Gly Ser Pro Gly  
 225 230 235

ttg agt aag ttc cgg ctc tcc tac tac cca cac tgt ctg gca tcc ttc 769  
 Leu Ser Lys Phe Arg Leu Ser Tyr Tyr Pro His Cys Leu Ala Ser Phe  
 240 245 250

acg gag ctg ctc caa gca gcc ttc gga ggt aag tgc cag cac agc gtc 817  
 Thr Glu Leu Leu Gln Ala Ala Phe Gly Gly Lys Cys Gln His Ser Val  
 255 260 265

ctg ggc gac ttc aag cct tac aag cca ggc caa acc tac att ccc tgc 865  
 Leu Gly Asp Phe Lys Pro Tyr Lys Pro Gly Gln Thr Tyr Ile Pro Cys  
 270 275 280 285

tac ttc atc cac gtg ctc aag agg aca gac tga gtgtggcctc agctccca 918  
 Tyr Phe Ile His Val Leu Lys Arg Thr Asp \*  
 290 295

agcctctgcc caggcactgc taggctctgt ctggaagatg gggaccagca gccccacacc 978  
 agggccagcc tctagagcag actacagctg ggggtgcaggg atgtgggttc cacagacgga 1038  
 agggtaaaca atatagtctt tttcagttcc tgcaaaaaaa aaaaaaaaaa aaaaaaaaaa 1097

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 <212> PRT  
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 Leu Tyr Ile Gly Asp Thr Arg Ser Arg Thr Ala Glu Tyr Lys Ala Trp  
 35 40 45  
 Leu Leu Gly Leu Leu Arg Gln His Gly Cys Gln Arg Val Leu Asp Val  
 50 55 60  
 Ala Cys Gly Thr Gly Val Asp Ser Ile Met Leu Val Glu Glu Gly Phe  
 65 70 75 80  
 Ser Val Thr Ser Val Asp Ala Ser Asp Lys Met Leu Lys Tyr Ala Leu  
 85 90 95  
 Lys Glu Arg Trp Asn Arg Arg His Glu Pro Ala Phe Asp Lys Trp Val  
 100 105 110  
 Ile Glu Glu Ala Asn Trp Met Thr Leu Asp Lys Asp Val Pro Gln Ser  
 115 120 125  
 Ala Glu Gly Gly Phe Asp Ala Val Ile Cys Leu Gly Asn Ser Phe Ala  
 130 135 140  
 His Leu Pro Asp Cys Lys Gly Asp Gln Ser Glu His Arg Leu Ala Leu

145		150		155		160
Lys Asn Ile Ala Ser Met Val Arg Ala Gly Gly Leu Leu Val Ile Asp						
	165		170		175	
His Arg Asn Tyr Asp His Ile Leu Ser Thr Gly Cys Ala Pro Pro Gly						
	180		185		190	
Lys Asn Ile Tyr Tyr Lys Ser Asp Leu Thr Lys Asp Val Thr Thr Ser						
	195		200		205	
Val Leu Ile Val Asn Asn Lys Ala His Met Val Thr Leu Asp Tyr Thr						
	210		215		220	
Val Gln Val Pro Gly Ala Gly Gln Asp Gly Ser Pro Gly Leu Ser Lys						
	225		230		235	240
Phe Arg Leu Ser Tyr Tyr Pro His Cys Leu Ala Ser Phe Thr Glu Leu						
	245		250		255	
Leu Gln Ala Ala Phe Gly Gly Lys Cys Gln His Ser Val Leu Gly Asp						
	260		265		270	
Phe Lys Pro Tyr Lys Pro Gly Gln Thr Tyr Ile Pro Cys Tyr Phe Ile						
	275		280		285	
His Val Leu Lys Arg Thr Asp						
	290		295			

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<220>  
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 gctcattcgt caccctgttg ggtgagcaca gccctagctc aggccactgg gcaagccaca 180  
 ccatccaaag aggaggtcct ctgccccagg acccccacac caccagct ccctgttttg 240  
 ctgaggcctg gagcccc atg gcc tca ctg agc cga gcc cta cgt gtg gct 291  
 Met Ala Ser Leu Ser Arg Ala Leu Arg Val Ala  
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gct gcc cac cct cgc cag agc cct acc cgg ggc atg ggg cca tgc aac 339  
 Ala Ala His Pro Arg Gln Ser Pro Thr Arg Gly Met Gly Pro Cys Asn  
 15 20 25

ctg tcc agc gca gct ggc ccc aca gcc gag aag agt gtg cca tat cag 387  
 Leu Ser Ser Ala Ala Gly Pro Thr Ala Glu Lys Ser Val Pro Tyr Gln  
 30 35 40

cgg acc ctg aag gag gga cag ggc acc tcg gtg gtg gcc caa ggc cca 435  
 Arg Thr Leu Lys Glu Gly Gln Gly Thr Ser Val Val Ala Gln Gly Pro  
 45 50 55

agc cgg ccc ctg ccc agc acg gcc aac gtg gtg gtc att ggt gga ggc 483  
 Ser Arg Pro Leu Pro Ser Thr Ala Asn Val Val Val Ile Gly Gly Gly  
 60 65 70 75

agc ttg ggc tgc cag acc ctg tac cac ctg gcc aag ctg ggc atg agt 531  
 Ser Leu Gly Cys Gln Thr Leu Tyr His Leu Ala Lys Leu Gly Met Ser  
 80 85 90

ggg gcg gtg ctg ctg gag cgg gag cgg ctg acc tcc ggg acc acc tgg 579  
 Gly Ala Val Leu Leu Glu Arg Glu Arg Leu Thr Ser Gly Thr Thr Trp  
 95 100 105



cac acg gca ggc ctg ctg tgg cag ctg cgg ccc agt gac gtg gag gtg	627
His Thr Ala Gly Leu Leu Trp Gln Leu Arg Pro Ser Asp Val Glu Val	
110 115 120	
 gag ctt ctg gcc cac act cgg cgg gtg gtg agc cgg gag ctg gag gag	675
Glu Leu Leu Ala His Thr Arg Arg Val Val Ser Arg Glu Leu Glu Glu	
125 130 135	
 gag acg gga cta cac acg ggc tgg atc cag aat ggg ggc ctc ttc atc	723
Glu Thr Gly Leu His Thr Gly Trp Ile Gln Asn Gly Gly Leu Phe Ile	
140 145 150 155	
 gcg tcc aac cgg cag cgc ctg gac gag tac aag agg ctc atg tcg ctg	771
Ala Ser Asn Arg Gln Arg Leu Asp Glu Tyr Lys Arg Leu Met Ser Leu	
160 165 170	
 ggc aag gcg tat ggt gtg gaa tcc cat gtg ctg agc ccg gca gag acc	819
Gly Lys Ala Tyr Gly Val Glu Ser His Val Leu Ser Pro Ala Glu Thr	
175 180 185	
 aag act ctg tac ccg ctg atg aat gtg gac gac ctc tac ggg acc ctg	867
Lys Thr Leu Tyr Pro Leu Met Asn Val Asp Asp Leu Tyr Gly Thr Leu	
190 195 200	
 tat gtg ccg cac gac ggt acc atg gac ccc gct ggc acc tgt acc acc	915
Tyr Val Pro His Asp Gly Thr Met Asp Pro Ala Gly Thr Cys Thr Thr	
205 210 215	
 ctc gcc agg gca gct tct gcc cga gga gca cag gtc att gag aac tgc	963
Leu Ala Arg Ala Ala Ser Ala Arg Gly Ala Gln Val Ile Glu Asn Cys	
220 225 230 235	
 cca gtg acc ggc att cgt gtg tgg acg gat gat ttt ggg gtg cgg cgg	1011
Pro Val Thr Gly Ile Arg Val Trp Thr Asp Asp Phe Gly Val Arg Arg	
240 245 250	
 gtc gcg ggt gtg gag act cag cat ggt tcc atc cag aca ccc tgc gtg	1059
Val Ala Gly Val Glu Thr Gln His Gly Ser Ile Gln Thr Pro Cys Val	
255 260 265	
 gtc aac tgt gca gga gtg tgg gca agt gct gtg ggc cgg atg gct gga	1107
Val Asn Cys Ala Gly Val Trp Ala Ser Ala Val Gly Arg Met Ala Gly	
270 275 280	
 gtc aag gtc ccg ctg gtg gcc atg cac cat gcc tat gtc gtc acc gag	1155
Val Lys Val Pro Leu Val Ala Met His His Ala Tyr Val Val Thr Glu	
285 290 295	
 cgc atc gag ggg att cag aac atg ccc aat gtc cgt gat cat gat gcc	1203
Arg Ile Glu Gly Ile Gln Asn Met Pro Asn Val Arg Asp His Asp Ala	
300 305 310 315	
 tct gtc tac ctc cgc ctc caa ggg gat gcc ttg tct gtg ggt ggc tat	1251
Ser Val Tyr Leu Arg Leu Gln Gly Asp Ala Leu Ser Val Gly Gly Tyr	
320 325 330	
 gag gcc aac ccc atc ttt tgg gag gag gtg tca gac aag ttt gcc ttc	1299
Glu Ala Asn Pro Ile Phe Trp Glu Glu Val Ser Asp Lys Phe Ala Phe	
335 340 345	
 ggc ctc ttt gac ctg gac tgg gag gtg ttc acc cag cac att gaa ggc	1347

Gly	Leu	Phe	Asp	Leu	Asp	Trp	Glu	Val	Phe	Thr	Gln	His	Ile	Glu	Gly	
		350					355					360				
gcc	atc	aac	agg	gtc	ccc	gtg	ctg	gag	aag	aca	gga	atc	aag	tcc	acg	1395
Ala	Ile	Asn	Arg	Val	Pro	Val	Leu	Glu	Lys	Thr	Gly	Ile	Lys	Ser	Thr	
	365					370					375					
gtc	tgc	ggc	cct	gaa	tcc	ttc	acg	ccc	gac	cac	aag	ccc	ctg	atg	ggg	1443
Val	Cys	Gly	Pro	Glu	Ser	Phe	Thr	Pro	Asp	His	Lys	Pro	Leu	Met	Gly	
380					385					390					395	
gag	gca	cct	gag	ctc	cga	ggg	ttc	ttc	ctg	ggc	tgt	ggc	ttc	aac	agc	1491
Glu	Ala	Pro	Glu	Leu	Arg	Gly	Phe	Phe	Leu	Gly	Cys	Gly	Phe	Asn	Ser	
				400					405					410		
gca	gga	atg	atg	ctg	ggg	ggg	ggc	tgt	ggg	cag	gag	ctg	gcc	cac	tgg	1539
Ala	Gly	Met	Met	Leu	Gly	Gly	Gly	Cys	Gly	Gln	Glu	Leu	Ala	His	Trp	
			415					420					425			
atc	atc	cat	ggg	cgc	ccg	gag	aag	gac	atg	cat	ggc	tat	gac	atc	agg	1587
Ile	Ile	His	Gly	Arg	Pro	Glu	Lys	Asp	Met	His	Gly	Tyr	Asp	Ile	Arg	
		430					435					440				
cgc	ttc	cat	cac	tgc	ctc	acg	gac	cac	ccc	cgc	tgg	atc	cga	gag	cga	1635
Arg	Phe	His	His	Ser	Leu	Thr	Asp	His	Pro	Arg	Trp	Ile	Arg	Glu	Arg	
	445					450					455					
agc	cat	gag	tcc	tac	gcc	aag	aac	tac	tcc	gtc	gtc	ttc	ccc	cac	gat	1683
Ser	His	Glu	Ser	Tyr	Ala	Lys	Asn	Tyr	Ser	Val	Val	Phe	Pro	His	Asp	
460					465					470					475	
gag	ccg	ctg	gcc	ggg	cgc	aac	atg	agg	aga	gac	ccg	ctg	cat	gag	gaa	1731
Glu	Pro	Leu	Ala	Gly	Arg	Asn	Met	Arg	Arg	Asp	Pro	Leu	His	Glu	Glu	
				480					485					490		
ctc	ctt	gga	caa	ggc	tgc	gtg	ttc	cag	gag	cgg	cat	ggc	tgg	gag	cga	1779
Leu	Leu	Gly	Gln	Gly	Cys	Val	Phe	Gln	Glu	Arg	His	Gly	Trp	Glu	Arg	
			495					500					505			
ccg	gga	tgg	ttt	cat	ccc	cga	ggc	cca	gct	ccg	gtc	ctc	gag	tac	gac	1827
Pro	Gly	Trp	Phe	His	Pro	Arg	Gly	Pro	Ala	Pro	Val	Leu	Glu	Tyr	Asp	
		510					515					520				
tac	tac	ggg	gct	tac	ggg	agc	cgc	gcg	cac	gag	gac	tac	gcc	tac	cgc	1875
Tyr	Tyr	Gly	Ala	Tyr	Gly	Ser	Arg	Ala	His	Glu	Asp	Tyr	Ala	Tyr	Arg	
		525				530					535					
agg	ctg	ctg	gca	gac	gag	tac	acc	ttc	gcc	ttc	ccg	ccc	cac	cac	gac	1923
Arg	Leu	Leu	Ala	Asp	Glu	Tyr	Thr	Phe	Ala	Phe	Pro	Pro	His	His	Asp	
540					545					550					555	
acg	atc	aag	aag	gag	tgc	ctg	gcc	tgc	aga	ggg	gcc	gcc	gct	gtg	ttt	1971
Thr	Ile	Lys	Lys	Glu	Cys	Leu	Ala	Cys	Arg	Gly	Ala	Ala	Ala	Val	Phe	
				560					565					570		
gac	atg	tcc	tac	ttc	ggg	aag	ttc	tac	ctg	gtg	ggg	ctg	gat	gca	agg	2019
Asp	Met	Ser	Tyr	Phe	Gly	Lys	Phe	Tyr	Leu	Val	Gly	Leu	Asp	Ala	Arg	
			575					580					585			
aag	gct	gcc	gac	tgg	ctc	ttc	tcc	gca	gat	gtc	agc	cga	ccc	cca	ggc	2067
Lys	Ala	Ala	Asp	Trp	Leu	Phe	Ser	Ala	Asp	Val	Ser	Arg	Pro	Pro	Gly	
		590					595					600				

tcc acc gtg tac acg tgc atg ctc aac cac cgt ggg ggc acc gag agt	2115
Ser Thr Val Tyr Thr Cys Met Leu Asn His Arg Gly Gly Thr Glu Ser	
605 610 615	
gac ctg act gtc agc cgc ctg gca ccc agc cac cag gcc tcc ccg ctg	2163
Asp Leu Thr Val Ser Arg Leu Ala Pro Ser His Gln Ala Ser Pro Leu	
620 625 630 635	
gcc ccc gcc ttt gaa ggg gac ggt tac tac ctg gcc atg ggc ggg gcc	2211
Ala Pro Ala Phe Glu Gly Asp Gly Tyr Tyr Leu Ala Met Gly Gly Ala	
640 645 650	
gtg gcc cag cac aac tgg tcc cac atc acc acc gtg ctg cag gac cag	2259
Val Ala Gln His Asn Trp Ser His Ile Thr Thr Val Leu Gln Asp Gln	
655 660 665	
aag tcc cag tgc cag ctc atc gac agc tcc gag gac ctg ggt atg atc	2307
Lys Ser Gln Cys Gln Leu Ile Asp Ser Ser Glu Asp Leu Gly Met Ile	
670 675 680	
agt atc cag ggc cca gcc agc cga gcc att ttg cag gag gtg ctg gac	2355
Ser Ile Gln Gly Pro Ala Ser Arg Ala Ile Leu Gln Glu Val Leu Asp	
685 690 695	
gca gac ctg agc aac gag gcc ttc ccg ttc tcc acc cac aag cta ctg	2403
Ala Asp Leu Ser Asn Glu Ala Phe Pro Phe Ser Thr His Lys Leu Leu	
700 705 710 715	
aga gcc gca ggg cac ctg gtc cga gcc atg cgg ctg tcc ttt gtg ggg	2451
Arg Ala Ala Gly His Leu Val Arg Ala Met Arg Leu Ser Phe Val Gly	
720 725 730	
gag ctg ggc tgg gag ctg cac att cca aag gcg tcc tgc gtg cct gtg	2499
Glu Leu Gly Trp Glu Leu His Ile Pro Lys Ala Ser Cys Val Pro Val	
735 740 745	
tac cgg gct gtg atg gcc gcg ggt gcc aag cac ggc ctc atc aac gca	2547
Tyr Arg Ala Val Met Ala Ala Gly Ala Lys His Gly Leu Ile Asn Ala	
750 755 760	
ggg tac cgc gcc atc gac tcc ctg agc att gag aaa ggc tac cgg cac	2595
Gly Tyr Arg Ala Ile Asp Ser Leu Ser Ile Glu Lys Gly Tyr Arg His	
765 770 775	
tgg cac gcg gac ctg cgg cca gac gac agc ccc ctg gag gca ggc ctg	2643
Trp His Ala Asp Leu Arg Pro Asp Asp Ser Pro Leu Glu Ala Gly Leu	
780 785 790 795	
gcc ttc acc tgc aag ctc aag tcg ccg gtg ccc ttc ctg ggg agg gag	2691
Ala Phe Thr Cys Lys Leu Lys Ser Pro Val Pro Phe Leu Gly Arg Glu	
800 805 810	
gcc ctg gag cag cag cgg gcc gca ggc ctc cgc cgg cgc ctg gtg tgc	2739
Ala Leu Glu Gln Gln Arg Ala Ala Gly Leu Arg Arg Arg Leu Val Cys	
815 820 825	
ttc acc atg gag gac aaa gta ccc atg ttt ggc ctg gag gcc atc tgg	2787
Phe Thr Met Glu Asp Lys Val Pro Met Phe Gly Leu Glu Ala Ile Trp	
830 835 840	
agg aac ggc caa gtg gtg ggc cat gtc cgg agg gct gac ttt ggg ttc	2835

Arg	Asn	Gly	Gln	Val	Val	Gly	His	Val	Arg	Arg	Ala	Asp	Phe	Gly	Phe		
845						850					855						

  

gcc	atc	gac	aag	acc	atc	gcc	tac	ggg	tac	atc	cat	gac	ccc	agc	ggg	2883	
Ala	Ile	Asp	Lys	Thr	Ile	Ala	Tyr	Gly	Tyr	Ile	His	Asp	Pro	Ser	Gly		
860					865				870						875		

  

ggg	ccg	gtc	tcg	ctg	gac	ttt	gtg	aag	agc	ggg	gac	tat	gcc	ctg	gag	2931	
Gly	Pro	Val	Ser	Leu	Asp	Phe	Val	Lys	Ser	Gly	Asp	Tyr	Ala	Leu	Glu		
				880				885						890			

  

aga	atg	ggg	gtg	acc	tat	ggg	gcc	cag	gct	cac	ctg	aag	tcg	ccc	ttc	2979	
Arg	Met	Gly	Val	Thr	Tyr	Gly	Ala	Gln	Ala	His	Leu	Lys	Ser	Pro	Phe		
			895					900					905				

  

gac	ccc	aac	aac	aag	agg	gtg	aag	gga	atc	tac	tga	gggctcagac				3025	
Asp	Pro	Asn	Asn	Lys	Arg	Val	Lys	Gly	Ile	Tyr	*						
		910					915										

  

cacatgcccc	atccccatgct	gtccatccat	tctcacaggt	cccaaattggc	cctgggtcccc	3085	
aggaccctgg	accagccag	aacttgtgcc	ctccctgtcc	ttagcctagg	cctagtcctg	3145	
cgaaaacccc	caaaccagat	acggacagag	accaagatgg	cccatcctgt	ggtcactgac	3205	
tggaaggcag	tctctaatacc	acccaatcc	tcccagaaag	caaacctgta	agtgtcttgg	3265	
gctcagggac	catggcttgt	agccctttcc	aagctttctaa	aagggtgctta	gtaaataactt	3325	
gataagcccc	acgtgaaaaa	aaaaaaaaaa	aaaaaaaaa			3363	

  

<210> 116  
 <211> 918  
 <212> PRT  
 <213> Homo Sapiens

  

<400> 116

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Gln	Ser	Pro	Thr	Arg	Gly	Met	Gly	Pro	Cys	Asn	Leu	Ser	Ser	Ala	Ala		
			20					25					30				
Gly	Pro	Thr	Ala	Glu	Lys	Ser	Val	Pro	Tyr	Gln	Arg	Thr	Leu	Lys	Glu		
		35					40					45					
Gly	Gln	Gly	Thr	Ser	Val	Val	Ala	Gln	Gly	Pro	Ser	Arg	Pro	Leu	Pro		
	50					55					60						
Ser	Thr	Ala	Asn	Val	Val	Val	Ile	Gly	Gly	Gly	Ser	Leu	Gly	Cys	Gln		
65				70					75					80			
Thr	Leu	Tyr	His	Leu	Ala	Lys	Leu	Gly	Met	Ser	Gly	Ala	Val	Leu	Leu		
			85					90					95				
Glu	Arg	Glu	Arg	Leu	Thr	Ser	Gly	Thr	Thr	Trp	His	Thr	Ala	Gly	Leu		
		100					105					110					
Leu	Trp	Gln	Leu	Arg	Pro	Ser	Asp	Val	Glu	Val	Glu	Leu	Leu	Ala	His		
		115					120					125					
Thr	Arg	Arg	Val	Val	Ser	Arg	Glu	Leu	Glu	Glu	Glu	Thr	Gly	Leu	His		
	130					135					140						
Thr	Gly	Trp	Ile	Gln	Asn	Gly	Gly	Leu	Phe	Ile	Ala	Ser	Asn	Arg	Gln		
145				150					155					160			
Arg	Leu	Asp	Glu	Tyr	Lys	Arg	Leu	Met	Ser	Leu	Gly	Lys	Ala	Tyr	Gly		
			165					170					175				
Val	Glu	Ser	His	Val	Leu	Ser	Pro	Ala	Glu	Thr	Lys	Thr	Leu	Tyr	Pro		
		180						185					190				
Leu	Met	Asn	Val	Asp	Asp	Leu	Tyr	Gly	Thr	Leu	Tyr	Val	Pro	His	Asp		
	195						200					205					
Gly	Thr	Met	Asp	Pro	Ala	Gly	Thr	Cys	Thr	Thr	Leu	Ala	Arg	Ala	Ala		
	210					215					220						
Ser	Ala	Arg	Gly	Ala	Gln	Val	Ile	Glu	Asn	Cys	Pro	Val	Thr	Gly	Ile		
225					230				235						240		

265

Leu His Ile Pro Lys Ala Ser Cys Val Pro Val Tyr Arg Ala Val Met  
 740 745 750  
 Ala Ala Gly Ala Lys His Gly Leu Ile Asn Ala Gly Tyr Arg Ala Ile  
 755 760 765  
 Asp Ser Leu Ser Ile Glu Lys Gly Tyr Arg His Trp His Ala Asp Leu  
 770 775 780  
 Arg Pro Asp Asp Ser Pro Leu Glu Ala Gly Leu Ala Phe Thr Cys Lys  
 785 790 795 800  
 Leu Lys Ser Pro Val Pro Phe Leu Gly Arg Glu Ala Leu Glu Gln Gln  
 805 810 815  
 Arg Ala Ala Gly Leu Arg Arg Arg Leu Val Cys Phe Thr Met Glu Asp  
 820 825 830  
 Lys Val Pro Met Phe Gly Leu Glu Ala Ile Trp Arg Asn Gly Gln Val  
 835 840 845  
 Val Gly His Val Arg Arg Ala Asp Phe Gly Phe Ala Ile Asp Lys Thr  
 850 855 860  
 Ile Ala Tyr Gly Tyr Ile His Asp Pro Ser Gly Gly Pro Val Ser Leu  
 865 870 875 880  
 Asp Phe Val Lys Ser Gly Asp Tyr Ala Leu Glu Arg Met Gly Val Thr  
 885 890 895  
 Tyr Gly Ala Gln Ala His Leu Lys Ser Pro Phe Asp Pro Asn Asn Lys  
 900 905 910  
 Arg Val Lys Gly Ile Tyr  
 915

<210> 117

<211> 2431

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (125)...(1639)

<400> 117

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 accgcgaggc cagacatctg actgttggtg tgagaccagt gtccttggtg gtgtgccctg 120  
 agcc atg gag gcg cct ttg cag aca gag atg gtg gag ctg gtg ccc aat 169  
 Met Glu Ala Pro Leu Gln Thr Glu Met Val Glu Leu Val Pro Asn  
 1 5 10 15  
  
 ggc aaa cac tca gag ggg ctg ctc ccg gtc atc acc ccc atg gca ggc 217  
 Gly Lys His Ser Glu Gly Leu Leu Pro Val Ile Thr Pro Met Ala Gly  
 20 25 30  
  
 aac cag agg gtc gag gac cct gca cgg agc tgt atg gag ggc aag agc 265  
 Asn Gln Arg Val Glu Asp Pro Ala Arg Ser Cys Met Glu Gly Lys Ser  
 35 40 45  
  
 ttc cta cag aaa agt ccc agc aag gag cca cac ttc act gac ttc gag 313  
 Phe Leu Gln Lys Ser Pro Ser Lys Glu Pro His Phe Thr Asp Phe Glu  
 50 55 60  
  
 ggg aag aca tca ttc ggg atg tca gtg ttc aac ctc agc aat gcc atc 361  
 Gly Lys Thr Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala Ile  
 65 70 75  
  
 atg ggc agc ggc atc ctg gga ctc gcc tat gcc atg gcc aat acg ggc 409  
 Met Gly Ser Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala Asn Thr Gly  
 80 85 90 95

att atc ctt ttc ctg ttc ctg ttg aca gct gtc gcc ttg ctc tcc agc	457
Ile Ile Leu Phe Leu Phe Leu Leu Thr Ala Val Ala Leu Leu Ser Ser	
100 105 110	
tac tcc atc cac ctg cta ctc aag tcc tca ggg gtc gtg ggc atc cgt	505
Tyr Ser Ile His Leu Leu Leu Lys Ser Ser Gly Val Val Gly Ile Arg	
115 120 125	
gcc tat gag cag ctg ggc tac cgt gcc ttt ggg acc cca gga aag ctg	553
Ala Tyr Glu Gln Leu Gly Tyr Arg Ala Phe Gly Thr Pro Gly Lys Leu	
130 135 140	
gca gca gcc ctg gcc atc acg ctc cag aac atc gga gcc atg tcc agc	601
Ala Ala Ala Leu Ala Ile Thr Leu Gln Asn Ile Gly Ala Met Ser Ser	
145 150 155	
tac ctg tac atc atc aag tct gag ctg cca ctt gtc ata cag acc ttc	649
Tyr Leu Tyr Ile Ile Lys Ser Glu Leu Pro Leu Val Ile Gln Thr Phe	
160 165 170 175	
ctg aac ctg gag gag aaa acc tcg gac tgg tac atg aac ggg aac tac	697
Leu Asn Leu Glu Glu Lys Thr Ser Asp Trp Tyr Met Asn Gly Asn Tyr	
180 185 190	
ctg gta atc ctt gtc tct gtc acc atc att ctg ccc ctg gca ctg atg	745
Leu Val Ile Leu Val Ser Val Thr Ile Ile Leu Pro Leu Ala Leu Met	
195 200 205	
cgg cag ctt ggc tac ctg ggc tac tcc agc ggc ttc tct ctt agc tgc	793
Arg Gln Leu Gly Tyr Leu Gly Tyr Ser Ser Ser Gly Phe Ser Leu Ser Cys	
210 215 220	
atg gtg ttc ttc cta att gca gtc atc tac aaa aag ttc cac gtg ccc	841
Met Val Phe Phe Leu Ile Ala Val Ile Tyr Lys Lys Phe His Val Pro	
225 230 235	
tgc cca ctg ccc ccc aac ttc aac aac acc aca ggc aac ttc agc cac	889
Cys Pro Leu Pro Pro Asn Phe Asn Asn Thr Thr Gly Asn Phe Ser His	
240 245 250 255	
gtg gag atc gtg aag gag aag gtg cag ctg cag gtc gag cct gag gct	937
Val Glu Ile Val Lys Glu Lys Val Gln Leu Gln Val Glu Pro Glu Ala	
260 265 270	
tca gcc ttc tgc act ccc agc tac ttc acg ctc aac tca cag aca gca	985
Ser Ala Phe Cys Thr Pro Ser Tyr Phe Thr Leu Asn Ser Gln Thr Ala	
275 280 285	
tac acc atc ccc atc atg gcc ttc gcc ttc gtc tgc cac ccc gag gtg	1033
Tyr Thr Ile Pro Ile Met Ala Phe Ala Phe Val Cys His Pro Glu Val	
290 295 300	
ctg ccc atc tat act gag ctc aag gac ccc tcc aag aag aag atg cag	1081
Leu Pro Ile Tyr Thr Glu Leu Lys Asp Pro Ser Lys Lys Lys Met Gln	
305 310 315	
cac atc tcc aac ctg tcc atc gct gtc atg tac atc atg tac ttc ctg	1129
His Ile Ser Asn Leu Ser Ile Ala Val Met Tyr Ile Met Tyr Phe Leu	
320 325 330 335	
gct gcc ctc ttc ggc tac ctc acc ttc tac aac ggg gtg gag tcg gag	1177
Ala Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Asn Gly Val Glu Ser Glu	

340	345	350	
ctg ctg cac acc tac agc aag gtg gac ccg ttt gac gtc ctg atc ctg			1225
Leu Leu His Thr Tyr Ser Lys Val Asp Pro Phe Asp Val Leu Ile Leu			
355	360	365	
tgt gtg cgc gtg gcc gtg ctg aca gca gtc acg ctc aca gtg ccc atc			1273
Cys Val Arg Val Ala Val Leu Thr Ala Val Thr Leu Thr Val Pro Ile			
370	375	380	
gtt ctg ttc ccg gtg cgc cgc gcc atc cag cag atg ctg ttt cca aac			1321
Val Leu Phe Pro Val Arg Arg Ala Ile Gln Gln Met Leu Phe Pro Asn			
385	390	395	
cag gag ttc agc tgg ctg cgg cat gtg ctt att gcc gtt ggc ctg ctc			1369
Gln Glu Phe Ser Trp Leu Arg His Val Leu Ile Ala Val Gly Leu Leu			
400	405	410	415
act tgt atc aac ctg ctg gtc atc ttt gcc ccc aac atc ctg ggc atc			1417
Thr Cys Ile Asn Leu Leu Val Ile Phe Ala Pro Asn Ile Leu Gly Ile			
420	425	430	
ttt ggg gtc atc ggt gcc aca tct gcc cca ttc ctc atc ttc atc ttc			1465
Phe Gly Val Ile Gly Ala Thr Ser Ala Pro Phe Leu Ile Phe Ile Phe			
435	440	445	
cct gcc atc ttc tac ttc cga atc atg ccc acg gag aag gag cct gca			1513
Pro Ala Ile Phe Tyr Phe Arg Ile Met Pro Thr Glu Lys Glu Pro Ala			
450	455	460	
aga tcc acc ccc aaa atc ctg gcc ctg tgt ttt gct atg ctt ggc ttc			1561
Arg Ser Thr Pro Lys Ile Leu Ala Leu Cys Phe Ala Met Leu Gly Phe			
465	470	475	
ttg ctg atg acc atg agc ttg agc ttc atc atc att gac tgg gcc tca			1609
Leu Leu Met Thr Met Ser Leu Ser Phe Ile Ile Ile Asp Trp Ala Ser			
480	485	490	495
ggg acc agc cgg cat gga gga aac cac tag ggtgaccctc atcctgttct			1659
Gly Thr Ser Arg His Gly Gly Asn His *			
500			
gtctactcac cctagcagcc ctgcccagac tcttcagccc ctgctcccat ccagtggcca			1719
gtcgggggag gagaaagacg cgattaacac tgtggcattc agccaggccc catgtcctct			1779
ctgtggaagg tttttgttca agagccagga ccaaggccct tggggccacta ccctgctagg			1839
ctctggagct gtagaggctt cctgaactgg gagcagggtg gggctgtcgc cttagatccc			1899
gcccagccc ctcatccct ccttgcacag atgcatacac tggggcccag cagctgcctc			1959
ctgaggtgac acagcctgta ggaacataca cagctgggat cagcctgcag ccatcccccg			2019
accctgctgc taggccacgg tctgcgccct ggggcctcat ctcccccagc ccacttgttt			2079
tcccccttt tattccctag gcccttttca gactcctggg cccttggata ctcttctccc			2139
atctcccttc acaggatgac accctcccat accccatagc tggggccagc aggttctgct			2199
gaggggtggg ctggtgtagg gacccccaag agaccctgt cctgtccctt caccagtcc			2259
ggggaggctg ggactcccc tgccacaagc ctggggccaca gtcacattc cactgctggg			2319
agaagaaaca ggccgaggcc cagagtggcc tgccccggg agccaaagac cccagtggcc			2379
acactgggat aggggtggga ggctggcagc cctcttttat aaatctcgtg cc			2431

<210> 118  
 <211> 504  
 <212> PRT  
 <213> Homo Sapiens

<400> 118



Met	Glu	Ala	Pro	Leu	Gln	Thr	Glu	Met	Val	Glu	Leu	Val	Pro	Asn	Gly	
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Lys	His	Ser	Glu	Gly	Leu	Leu	Pro	Val	Ile	Thr	Pro	Met	Ala	Gly	Asn	
			20					25					30			
Gln	Arg	Val	Glu	Asp	Pro	Ala	Arg	Ser	Cys	Met	Glu	Gly	Lys	Ser	Phe	
		35					40					45				
Leu	Gln	Lys	Ser	Pro	Ser	Lys	Glu	Pro	His	Phe	Thr	Asp	Phe	Glu	Gly	
	50					55					60					
Lys	Thr	Ser	Phe	Gly	Met	Ser	Val	Phe	Asn	Leu	Ser	Asn	Ala	Ile	Met	
65					70				75						80	
Gly	Ser	Gly	Ile	Leu	Gly	Leu	Ala	Tyr	Ala	Met	Ala	Asn	Thr	Gly	Ile	
				85					90					95		
Ile	Leu	Phe	Leu	Phe	Leu	Leu	Thr	Ala	Val	Ala	Leu	Leu	Ser	Ser	Tyr	
			100					105					110			
Ser	Ile	His	Leu	Leu	Leu	Lys	Ser	Ser	Gly	Val	Val	Gly	Ile	Arg	Ala	
		115					120					125				
Tyr	Glu	Gln	Leu	Gly	Tyr	Arg	Ala	Phe	Gly	Thr	Pro	Gly	Lys	Leu	Ala	
	130					135					140					
Ala	Ala	Leu	Ala	Ile	Thr	Leu	Gln	Asn	Ile	Gly	Ala	Met	Ser	Ser	Tyr	
145					150					155					160	
Leu	Tyr	Ile	Ile	Lys	Ser	Glu	Leu	Pro	Leu	Val	Ile	Gln	Thr	Phe	Leu	
				165					170					175		
Asn	Leu	Glu	Glu	Lys	Thr	Ser	Asp	Trp	Tyr	Met	Asn	Gly	Asn	Tyr	Leu	
			180					185				190				
Val	Ile	Leu	Val	Ser	Val	Thr	Ile	Ile	Leu	Pro	Leu	Ala	Leu	Met	Arg	
		195					200					205				
Gln	Leu	Gly	Tyr	Leu	Gly	Tyr	Ser	Ser	Gly	Phe	Ser	Leu	Ser	Cys	Met	
	210					215					220					
Val	Phe	Phe	Leu	Ile	Ala	Val	Ile	Tyr	Lys	Lys	Phe	His	Val	Pro	Cys	
225					230					235					240	
Pro	Leu	Pro	Pro	Asn	Phe	Asn	Asn	Thr	Thr	Gly	Asn	Phe	Ser	His	Val	
				245					250					255		
Glu	Ile	Val	Lys	Glu	Lys	Val	Gln	Leu	Gln	Val	Glu	Pro	Glu	Ala	Ser	
			260					265					270			
Ala	Phe	Cys	Thr	Pro	Ser	Tyr	Phe	Thr	Leu	Asn	Ser	Gln	Thr	Ala	Tyr	
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Thr	Ile	Pro	Ile	Met	Ala	Phe	Ala	Phe	Val	Cys	His	Pro	Glu	Val	Leu	
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Pro	Ile	Tyr	Thr	Glu	Leu	Lys	Asp	Pro	Ser	Lys	Lys	Lys	Met	Gln	His	
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Ile	Ser	Asn	Leu	Ser	Ile	Ala	Val	Met	Tyr	Ile	Met	Tyr	Phe	Leu	Ala	
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Ala	Leu	Phe	Gly	Tyr	Leu	Thr	Phe	Tyr	Asn	Gly	Val	Glu	Ser	Glu	Leu	
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Leu	His	Thr	Tyr	Ser	Lys	Val	Asp	Pro	Phe	Asp	Val	Leu	Ile	Leu	Cys	
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Val	Arg	Val	Ala	Val	Leu	Thr	Ala	Val	Thr	Leu	Thr	Val	Pro	Ile	Val	
	370					375					380					
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Glu	Phe	Ser	Trp	Leu	Arg	His	Val	Leu	Ile	Ala	Val	Gly	Leu	Leu	Thr	
				405					410					415		
Cys	Ile	Asn	Leu	Leu	Val	Ile	Phe	Ala	Pro	Asn	Ile	Leu	Gly	Ile	Phe	
			420					425					430			
Gly	Val	Ile	Gly	Ala	Thr	Ser	Ala	Pro	Phe	Leu	Ile	Phe	Ile	Phe	Pro	
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Ala	Ile	Phe	Tyr	Phe	Arg	Ile	Met	Pro	Thr	Glu	Lys	Glu	Pro	Ala	Arg	
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Ser	Thr	Pro	Lys	Ile	Leu	Ala	Leu	Cys	Phe	Ala	Met	Leu	Gly	Phe	Leu	
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Leu	Met	Thr	Met	Ser	Leu	Ser	Phe	Ile	Ile	Ile	Asp	Trp	Ala	Ser	Gly	
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<212> DNA  
<213> Homo Sapiens

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<221> CDS  
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gccggcgaga ccccgccag acccgctgc cgcacaaa atg tcg gcc cgg acg 174  
Met Ser Ala Arg Thr  
1 5  
  
cca ttg ccg acg gtg aac gag cgg gac acg gaa aat cat aca tct gtg 222  
Pro Leu Pro Thr Val Asn Glu Arg Asp Thr Glu Asn His Thr Ser Val  
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gat gga tat act gaa cca cac atc cag cct acc aag tcg agt agc aga 270  
Asp Gly Tyr Thr Glu Pro His Ile Gln Pro Thr Lys Ser Ser Ser Arg  
25 30 35  
  
cag aac atc ccc cgg tgt aga aac tcc att acg tca gca aca gat gaa 318  
Gln Asn Ile Pro Arg Cys Arg Asn Ser Ile Thr Ser Ala Thr Asp Glu  
40 45 50  
  
cag cct cac att gga aat tac cgt tta caa aaa aca ata ggg aag gga 366  
Gln Pro His Ile Gly Asn Tyr Arg Leu Gln Lys Thr Ile Gly Lys Gly  
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aat ttt gcc aaa gtc aaa ttg gca aga cac gtt cta act ggt aga gag 414  
Asn Phe Ala Lys Val Lys Leu Ala Arg His Val Leu Thr Gly Arg Glu  
70 75 80 85  
  
gtt gct gtg aaa ata ata gac aaa act cag cta aat cct acc agt cta 462  
Val Ala Val Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro Thr Ser Leu  
90 95 100  
  
caa aag tta ttt cga gaa gta cga ata atg aag ata ctg aat cat cct 510  
Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Ile Leu Asn His Pro  
105 110 115  
  
aat ata gta aaa ttg ttt gaa gtt att gaa aca gag aag act ctc tat 558  
Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys Thr Leu Tyr  
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tta gtc atg gaa tac gcg agt ggg ggt gaa gta ttt gat tac tta gtt 606  
Leu Val Met Glu Tyr Ala Ser Gly Gly Glu Val Phe Asp Tyr Leu Val  
135 140 145  
  
gcc cat gga aga atg aaa gag aaa gag gcc cgt gca aaa ttt agg cag 654  
Ala His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe Arg Gln  
150 155 160 165  
  
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Ile Val Ser Ala Val Gln Tyr Cys His Gln Lys Tyr Ile Val His Arg

170										175					180					
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Asp	Leu	Lys	Ala	Glu	Asn	Leu	Leu	Leu	Asp	Gly	Asp	Met	Asn	Ile	Lys					
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att	gct	gac	ttt	ggg	ttt	agt	aat	gaa	ttt	aca	ggt	ggg	aac	aaa	ttg	798				
Ile	Ala	Asp	Phe	Gly	Phe	Ser	Asn	Glu	Phe	Thr	Val	Gly	Asn	Lys	Leu					
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gac	aca	ttt	tgt	gga	agc	cca	ccc	tat	gct	gct	ccc	gag	ctt	ttc	caa	846				
Asp	Thr	Phe	Cys	Gly	Ser	Pro	Pro	Tyr	Ala	Ala	Pro	Glu	Leu	Phe	Gln					
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gga	aag	aag	tat	gat	ggg	cct	gaa	gtg	gat	gtg	tgg	agt	ctg	ggc	gtc	894				
Gly	Lys	Lys	Tyr	Asp	Gly	Pro	Glu	Val	Asp	Val	Trp	Ser	Leu	Gly	Val					
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att	ctc	tat	aca	tta	gtc	agt	ggc	tcc	ttg	cct	ttc	gat	ggc	cag	aat	942				
Ile	Leu	Tyr	Thr	Leu	Val	Ser	Gly	Ser	Leu	Pro	Phe	Asp	Gly	Gln	Asn					
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tta	aag	gaa	ctg	cga	gag	cga	gtt	tta	cga	ggg	aag	tac	cgt	att	ccc	990				
Leu	Lys	Glu	Leu	Arg	Glu	Arg	Val	Leu	Arg	Gly	Lys	Tyr	Arg	Ile	Pro					
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ttc	tat	atg	tcc	aca	gac	tgt	gaa	aat	ctt	ctg	aag	aaa	tta	tta	gtc	1038				
Phe	Tyr	Met	Ser	Thr	Asp	Cys	Glu	Asn	Leu	Leu	Lys	Lys	Leu	Leu	Val					
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ctg	aat	cca	ata	aag	aga	ggc	agc	ttg	gaa	caa	ata	atg	aaa	gat	cga	1086				
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Trp	Met	Asn	Val	Gly	His	Glu	Glu	Glu	Glu	Leu	Lys	Pro	Tyr	Thr	Glu					
			310			315						320			325					
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Pro	Asp	Pro	Asp	Phe	Asn	Asp	Thr	Lys	Arg	Ile	Asp	Ile	Met	Val	Thr					
			330			335						340								
atg	ggc	ttt	gca	cga	gat	gaa	ata	aat	gat	gcc	tta	ata	aat	cag	aag	1230				
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Tyr	Asp	Glu	Val	Met	Ala	Thr	Tyr	Ile	Leu	Leu	Gly	Arg	Lys	Pro	Pro					
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gaa	ttt	gaa	ggg	ggg	gaa	tcg	tta	tcc	agt	gga	aac	ttg	tgt	cag	agg	1326				
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			375			380						385								
tcc	cgg	ccc	agt	agt	gac	tta	aac	aac	agc	act	ctt	cag	tcc	cct	gct	1374				
Ser	Arg	Pro	Ser	Ser	Asp	Leu	Asn	Asn	Ser	Thr	Leu	Gln	Ser	Pro	Ala					
			390			395						400			405					
cac	ctg	aag	gtc	cag	aga	agt	atc	tca	gca	aat	cag	aag	cag	cgg	cgt	1422				
His	Leu	Lys	Val	Gln	Arg	Ser	Ile	Ser	Ala	Asn	Gln	Lys	Gln	Arg	Arg					
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ttc agt gat cat gct ggt cca tcc att cct cct gct gta tca tat acc	1470
Phe Ser Asp His Ala Gly Pro Ser Ile Pro Pro Ala Val Ser Tyr Thr	
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Lys Arg Pro Gln Ala Asn Ser Val Glu Ser Glu Gln Lys Glu Glu Trp	
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gac aaa gat gtg gct cga aaa ctt ggc agc aca aca gtt gga tca aaa	1566
Asp Lys Asp Val Ala Arg Lys Leu Gly Ser Thr Thr Val Gly Ser Lys	
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agc gag atg act gca agc cct ctt gta ggg cca gag agg aaa aaa tct	1614
Ser Glu Met Thr Ala Ser Pro Leu Val Gly Pro Glu Arg Lys Lys Ser	
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Ser Thr Ile Pro Ser Asn Asn Val Tyr Ser Gly Gly Ser Met Ala Arg	
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Arg Asn Thr Tyr Val Cys Glu Arg Thr Thr Asp Arg Tyr Val Ala Leu	
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Gln Asn Gly Lys Asp Ser Ser Leu Thr Glu Met Ser Val Ser Ser Ile	
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Ser Ser Ala Gly Ser Ser Val Ala Ser Ala Val Pro Ser Ala Arg Pro	
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Arg His Gln Lys Ser Met Ser Thr Ser Gly His Pro Ile Lys Val Thr	
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Leu Pro Thr Ile Lys Asp Gly Ser Glu Ala Tyr Arg Pro Gly Thr Thr	
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Gln Arg Val Pro Ala Ala Ser Pro Ser Ala His Ser Ile Ser Thr Ala	
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Thr Pro Asp Arg Thr Arg Phe Pro Arg Gly Ser Ser Ser Arg Ser Thr	
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Phe His Gly Glu Gln Leu Arg Glu Arg Arg Ser Val Ala Tyr Asn Gly	
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cca cct gct tca cca tcc cat gaa acg ggt gca ttt gca cat gcc aga	2094
Pro Pro Ala Ser Pro Ser His Glu Thr Gly Ala Phe Ala His Ala Arg	
630 635 640 645	
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Arg Gly Thr Ser Thr Gly Ile Ile Ser Lys Ile Thr Ser Lys Phe Val	
650 655 660	
cgc agg gat cca agt gaa ggc gaa gcc agt ggc aga acc gac acc tca	2190
Arg Arg Asp Pro Ser Glu Gly Glu Ala Ser Gly Arg Thr Asp Thr Ser	

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aga	agt	aca	tca	ggg	gaa	cca	aaa	gaa	aga	gac	aag	gaa	gag	ggg	aaa	2238
Arg	Ser	Thr	Ser	Gly	Glu	Pro	Lys	Glu	Arg	Asp	Lys	Glu	Glu	Gly	Lys	
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gat	tct	aag	ccg	cgt	tct	ttg	cgg	ttc	aca	tgg	agt	atg	aag	acc	act	2286
Asp	Ser	Lys	Pro	Arg	Ser	Leu	Arg	Phe	Thr	Trp	Ser	Met	Lys	Thr	Thr	
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agt	tca	atg	gac	cct	aat	gac	atg	atg	aga	gaa	atc	cga	aaa	gtg	tta	2334
Ser	Ser	Met	Asp	Pro	Asn	Asp	Met	Met	Arg	Glu	Ile	Arg	Lys	Val	Leu	
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gat	gca	aat	aac	tgt	gat	tat	gag	caa	aaa	gag	aga	ttt	ttg	ctt	ttc	2382
Asp	Ala	Asn	Asn	Cys	Asp	Tyr	Glu	Gln	Lys	Glu	Arg	Phe	Leu	Leu	Phe	
				730					735					740		
tgt	gtc	cat	gga	gac	gct	aga	cag	gat	agc	ctc	gtg	cag	tgg	gag	atg	2430
Cys	Val	His	Gly	Asp	Ala	Arg	Gln	Asp	Ser	Leu	Val	Gln	Trp	Glu	Met	
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gaa	gtc	tgc	aag	ttg	cca	cga	ctg	tca	ctt	aat	ggg	gtt	cgc	ttc	aag	2478
Glu	Val	Cys	Lys	Leu	Pro	Arg	Leu	Ser	Leu	Asn	Gly	Val	Arg	Phe	Lys	
		760					765					770				
cga	ata	tct	ggg	aca	tct	att	gcc	ttt	aag	aac	att	gca	tca	aaa	ata	2526
Arg	Ile	Ser	Gly	Thr	Ser	Ile	Ala	Phe	Lys	Asn	Ile	Ala	Ser	Lys	Ile	
		775				780					785					
gca	aat	gag	ctt	aag	ctg	taa	aga	agt	ccaa	att	tac	agg	gaaga			2577
Ala	Asn	Glu	Leu	Lys	Leu	*										
		790			795											
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<211> 795

<212> PRT

<213> Homo Sapiens

<400> 120

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Lys	Ser	Ser	Ser	Arg	Gln	Asn	Ile	Pro	Arg	Cys	Arg	Asn	Ser	Ile	Thr	
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Thr	Ile	Gly	Lys	Gly	Asn	Phe	Ala	Lys	Val	Lys	Leu	Ala	Arg	His	Val	
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Leu	Thr	Gly	Arg	Glu	Val	Ala	Val	Lys	Ile	Asp	Lys	Thr	Gln	Leu		
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Asn	Pro	Thr	Ser	Leu	Gln	Lys	Leu	Phe	Arg	Glu	Val	Arg	Ile	Met	Lys	
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Ile	Leu	Asn	His	Pro	Asn	Ile	Val	Lys	Leu	Phe	Glu	Val	Ile	Glu	Thr	
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Glu	Lys	Thr	Leu	Tyr	Leu	Val	Met	Glu	Tyr	Ala	Ser	Gly	Gly	Glu	Val
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Phe	Asp	Tyr	Leu	Val	Ala	His	Gly	Arg	Met	Lys	Glu	Lys	Glu	Ala	Arg
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Ala	Lys	Phe	Arg	Gln	Ile	Val	Ser	Ala	Val	Gln	Tyr	Cys	His	Gln	Lys
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Tyr	Ile	Val	His	Arg	Asp	Leu	Lys	Ala	Glu	Asn	Leu	Leu	Leu	Asp	Gly
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Asp	Met	Asn	Ile	Lys	Ile	Ala	Asp	Phe	Gly	Phe	Ser	Asn	Glu	Phe	Thr
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Val	Gly	Asn	Lys	Leu	Asp	Thr	Phe	Cys	Gly	Ser	Pro	Pro	Tyr	Ala	Ala
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Pro	Glu	Leu	Phe	Gln	Gly	Lys	Lys	Tyr	Asp	Gly	Pro	Glu	Val	Asp	Val
225					230					235					240
Trp	Ser	Leu	Gly	Val	Ile	Leu	Tyr	Thr	Leu	Val	Ser	Gly	Ser	Leu	Pro
				245					250					255	
Phe	Asp	Gly	Gln	Asn	Leu	Lys	Glu	Leu	Arg	Glu	Arg	Val	Leu	Arg	Gly
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Lys	Tyr	Arg	Ile	Pro	Phe	Tyr	Met	Ser	Thr	Asp	Cys	Glu	Asn	Leu	Leu
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Lys	Lys	Leu	Leu	Val	Leu	Asn	Pro	Ile	Lys	Arg	Gly	Ser	Leu	Glu	Gln
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Ile	Met	Lys	Asp	Arg	Trp	Met	Asn	Val	Gly	His	Glu	Glu	Glu	Glu	Leu
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Lys	Pro	Tyr	Thr	Glu	Pro	Asp	Pro	Asp	Phe	Asn	Asp	Thr	Lys	Arg	Ile
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Asp	Ile	Met	Val	Thr	Met	Gly	Phe	Ala	Arg	Asp	Glu	Ile	Asn	Asp	Ala
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Leu	Ile	Asn	Gln	Lys	Tyr	Asp	Glu	Val	Met	Ala	Thr	Tyr	Ile	Leu	Leu
		355					360					365			
Gly	Arg	Lys	Pro	Pro	Glu	Phe	Glu	Gly	Gly	Glu	Ser	Leu	Ser	Ser	Gly
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Asn	Leu	Cys	Gln	Arg	Ser	Arg	Pro	Ser	Ser	Asp	Leu	Asn	Asn	Ser	Thr
385					390					395					400
Leu	Gln	Ser	Pro	Ala	His	Leu	Lys	Val	Gln	Arg	Ser	Ile	Ser	Ala	Asn
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Gln	Lys	Gln	Arg	Arg	Phe	Ser	Asp	His	Ala	Gly	Pro	Ser	Ile	Pro	Pro
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Ala	Val	Ser	Tyr	Thr	Lys	Arg	Pro	Gln	Ala	Asn	Ser	Val	Glu	Ser	Glu
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Gln	Lys	Glu	Glu	Trp	Asp	Lys	Asp	Val	Ala	Arg	Lys	Leu	Gly	Ser	Thr
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Thr	Val	Gly	Ser	Lys	Ser	Glu	Met	Thr	Ala	Ser	Pro	Leu	Val	Gly	Pro
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Glu	Arg	Lys	Lys	Ser	Ser	Thr	Ile	Pro	Ser	Asn	Asn	Val	Tyr	Ser	Gly
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Gly	Ser	Met	Ala	Arg	Arg	Asn	Thr	Tyr	Val	Cys	Glu	Arg	Thr	Thr	Asp
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Arg	Tyr	Val	Ala	Leu	Gln	Asn	Gly	Lys	Asp	Ser	Ser	Leu	Thr	Glu	Met
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Ser	Val	Ser	Ser	Ile	Ser	Ser	Ala	Gly	Ser	Ser	Val	Ala	Ser	Ala	Val
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Pro	Ser	Ala	Arg	Pro	Arg	His	Gln	Lys	Ser	Met	Ser	Thr	Ser	Gly	His
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Pro	Ile	Lys	Val	Thr	Leu	Pro	Thr	Ile	Lys	Asp	Gly	Ser	Glu	Ala	Tyr
				565					570					575	
Arg	Pro	Gly	Thr	Thr	Gln	Arg	Val	Pro	Ala	Ala	Ser	Pro	Ser	Ala	His
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Ser	Ile	Ser	Thr	Ala	Thr	Pro	Asp	Arg	Thr	Arg	Phe	Pro	Arg	Gly	Ser
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Ser	Ser	Arg	Ser	Thr	Phe	His	Gly	Glu	Gln	Leu	Arg	Glu	Arg	Arg	Ser
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Val	Ala	Tyr	Asn	Gly	Pro	Pro	Ala	Ser	Pro	Ser	His	Glu	Thr	Gly	Ala
625					630				635						640
Phe	Ala	His	Ala	Arg	Arg	Gly	Thr	Ser	Thr	Gly	Ile	Ile	Ser	Lys	Ile
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Thr	Ser	Lys	Phe	Val	Arg	Arg	Asp	Pro	Ser	Glu	Gly	Glu	Ala	Ser	Gly
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Arg	Thr	Asp	Thr	Ser	Arg	Ser	Thr	Ser	Gly	Glu	Pro	Lys	Glu	Arg	Asp
		675					680					685			
Lys	Glu	Glu	Gly	Lys	Asp	Ser	Lys	Pro	Arg	Ser	Leu	Arg	Phe	Thr	Trp
	690					695					700				
Ser	Met	Lys	Thr	Thr	Ser	Ser	Met	Asp	Pro	Asn	Asp	Met	Met	Arg	Glu
705					710					715					720
Ile	Arg	Lys	Val	Leu	Asp	Ala	Asn	Asn	Cys	Asp	Tyr	Glu	Gln	Lys	Glu
				725					730						735
Arg	Phe	Leu	Leu	Phe	Cys	Val	His	Gly	Asp	Ala	Arg	Gln	Asp	Ser	Leu
			740					745					750		
Val	Gln	Trp	Glu	Met	Glu	Val	Cys	Lys	Leu	Pro	Arg	Leu	Ser	Leu	Asn
	755						760					765			
Gly	Val	Arg	Phe	Lys	Arg	Ile	Ser	Gly	Thr	Ser	Ile	Ala	Phe	Lys	Asn
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<211> 1811

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

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<400> 121

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Leu Trp Leu Gly Phe Leu Leu Pro Met Thr Val Ser Gly Arg Val Leu	
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ggg ctt gca gag gtg gcg ccc gtg gac tac ctg tca caa tat ggg tac	212
Gly Leu Ala Glu Val Ala Pro Val Asp Tyr Leu Ser Gln Tyr Gly Tyr	
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cta cag aag cct cta gaa gga tct aat aac ttc aag cca gaa gat atc	260
Leu Gln Lys Pro Leu Glu Gly Ser Asn Asn Phe Lys Pro Glu Asp Ile	
	40 45 50

acc gag gct ctg aga gct ttt cag gaa gca tct gaa ctt cca gtc tca	308
Thr Glu Ala Leu Arg Ala Phe Gln Glu Ala Ser Glu Leu Pro Val Ser	
	55 60 65

ggt cag ctg gat gat gcc aca agg gcc cgc atg agg cag cct cgt tgt	356
Gly Gln Leu Asp Asp Ala Thr Arg Ala Arg Met Arg Gln Pro Arg Cys	
	70 75 80 85

ggc cta gag gat ccc ttc aac cag aag acc ctt aaa tac ctg ttg ctg	404
Gly Leu Glu Asp Pro Phe Asn Gln Lys Thr Leu Lys Tyr Leu Leu Leu	
	90 95 100

ggc cgc tgg aga aag aag cac ctg act ttc cgc atc ttg aac ctg ccc	452
Gly Arg Trp Arg Lys Lys His Leu Thr Phe Arg Ile Leu Asn Leu Pro	
105 110 115	
tcc acc ctt cca ccc cac aca gcc cgg gca gcc ctg cgt caa gcc ttc	500
Ser Thr Leu Pro Pro His Thr Ala Arg Ala Ala Leu Arg Gln Ala Phe	
120 125 130	
cag gac tgg agc aat gtg gct ccc ttg acc ttc caa gag gtg cag gct	548
Gln Asp Trp Ser Asn Val Ala Pro Leu Thr Phe Gln Glu Val Gln Ala	
135 140 145	
ggg ggc gct gac atc cgc ctc tcc ttc cat ggc cgc caa agc tcg tac	596
Gly Ala Ala Asp Ile Arg Leu Ser Phe His Gly Arg Gln Ser Ser Tyr	
150 155 160 165	
tgt tcc aat act ttt gat ggg cct ggg aga gtc ctg gcc cat gcc gac	644
Cys Ser Asn Thr Phe Asp Gly Pro Gly Arg Val Leu Ala His Ala Asp	
170 175 180	
atc cca gag ctg ggc agt gtg cac ttc gac gaa gac gag ttc tgg act	692
Ile Pro Glu Leu Gly Ser Val His Phe Asp Glu Asp Glu Phe Trp Thr	
185 190 195	
gag ggg acc tac cgt ggg gtg aac ctg cgc atc att gca gcc cat gaa	740
Glu Gly Thr Tyr Arg Gly Val Asn Leu Arg Ile Ile Ala Ala His Glu	
200 205 210	
gtg ggc cat gct ctg ggg ctt ggg cac tcc cga tat tcc cag gcc ctc	788
Val Gly His Ala Leu Gly Leu Gly His Ser Arg Tyr Ser Gln Ala Leu	
215 220 225	
atg gcc cca gtc tac gag ggc tac cgg ccc cac ttt aag ctg cac cca	836
Met Ala Pro Val Tyr Glu Gly Tyr Arg Pro His Phe Lys Leu His Pro	
230 235 240 245	
gat gat gtg gca ggg atc cag gct ctc tat ggc aag aag agt cca gtg	884
Asp Asp Val Ala Gly Ile Gln Ala Leu Tyr Gly Lys Lys Ser Pro Val	
250 255 260	
ata agg gat gag gaa gaa gaa gag aca gag ctg ccc act gtg ccc cca	932
Ile Arg Asp Glu Glu Glu Glu Glu Thr Glu Leu Pro Thr Val Pro Pro	
265 270 275	
gtg ccc aca gaa ccc agt ccc atg cca gac cct tgc agt agt gaa ctg	980
Val Pro Thr Glu Pro Ser Pro Met Pro Asp Pro Cys Ser Ser Glu Leu	
280 285 290	
gat gcc atg atg ctg ggg ccc cgt ggg aag acc tat gct ttc aag ggg	1028
Asp Ala Met Met Leu Gly Pro Arg Gly Lys Thr Tyr Ala Phe Lys Gly	
295 300 305	
gac tat gtg tgg act gta tca gat tca gga ccg ggc ccc ttg ttc cga	1076
Asp Tyr Val Trp Thr Val Ser Asp Ser Gly Pro Gly Pro Leu Phe Arg	
310 315 320 325	
gtg tct gcc ctt tgg gag ggg ctc ccc gga aac ctg gat gct gct gtc	1124
Val Ser Ala Leu Trp Glu Gly Leu Pro Gly Asn Leu Asp Ala Ala Val	
330 335 340	
tac tcg cct cga aca caa tgg att cac ttc ttt aag gga gac aag gtg	1172



Tyr	Ser	Pro	Arg	Thr	Gln	Trp	Ile	His	Phe	Phe	Lys	Gly	Asp	Lys	Val		
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tgg	cgc	tac	att	aat	ttc	aag	atg	tct	cct	ggc	ttc	ccc	aag	aag	ctg	1220	
Trp	Arg	Tyr	Ile	Asn	Phe	Lys	Met	Ser	Pro	Gly	Phe	Pro	Lys	Lys	Leu		
		360					365					370					
aat	agg	gta	gaa	cct	aac	ctg	gat	gca	gct	ctc	tat	tgg	cct	ctc	aac	1268	
Asn	Arg	Val	Glu	Pro	Asn	Leu	Asp	Ala	Ala	Leu	Tyr	Trp	Pro	Leu	Asn		
		375				380					385						
caa	aag	gtg	ttc	ctc	ttt	aag	ggc	tcc	ggg	tac	tgg	cag	tgg	gac	gag	1316	
Gln	Lys	Val	Phe	Leu	Phe	Lys	Gly	Ser	Gly	Tyr	Trp	Gln	Trp	Asp	Glu		
390					395					400					405		
cta	gcc	cga	act	gac	ttc	agc	agc	tac	ccc	aaa	cca	atc	aag	ggg	ttg	1364	
Leu	Ala	Arg	Thr	Asp	Phe	Ser	Ser	Tyr	Pro	Lys	Pro	Ile	Lys	Gly	Leu		
			410					415					420				
ttt	acg	gga	gtg	cca	aac	cag	ccc	tcg	gct	gct	atg	agt	tgg	caa	gat	1412	
Phe	Thr	Gly	Val	Pro	Asn	Gln	Pro	Ser	Ala	Ala	Met	Ser	Trp	Gln	Asp		
		425					430					435					
ggc	cga	gtc	tac	ttc	ttc	aag	ggc	aaa	gtc	tac	tgg	cgc	ctc	aac	cag	1460	
Gly	Arg	Val	Tyr	Phe	Phe	Lys	Gly	Lys	Val	Tyr	Trp	Arg	Leu	Asn	Gln		
		440					445					450					
cag	ctt	cga	gta	gag	aaa	ggc	tat	ccc	aga	aat	att	tcc	cac	aac	tgg	1508	
Gln	Leu	Arg	Val	Glu	Lys		Gly	Tyr	Pro	Arg	Asn	Ile	Ser	His	Asn	Trp	
		455				460					465						
atg	cac	tgt	cgt	ccc	cgg	act	ata	gac	act	acc	cca	tca	ggg	ggg	aat	1556	
Met	His	Cys	Arg	Pro	Arg	Thr	Ile	Asp	Thr	Thr	Pro	Ser	Gly	Gly	Asn		
470					475				480					485			
acc	act	ccc	tca	ggg	acg	ggc	ata	acc	ttg	gat	acc	act	ctc	tca	gcc	1604	
Thr	Thr	Pro	Ser	Gly	Thr	Gly	Ile	Thr	Leu	Asp	Thr	Thr	Leu	Ser	Ala		
			490					495					500				
aca	gaa	acc	acg	ttt	gaa	tac	tga	ctgctc	acccc	acagacacaa	tcttggacat	1658					
Thr	Glu	Thr	Thr	Phe	Glu	Tyr	*										
			505														
taaccctga	ggctccacca	cccacccttt	catttcccc	ccagaagcct	aaggccta	1718											
agctgaatga	aatacctgtc	tgctcagtag	aaccttgcag	gtgctgtagc	aggcgcaaga	1778											
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<210> 122

<211> 508

<212> PRT

<213> Homo Sapiens

<400> 122

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			20					25				30					
Ser	Gln	Tyr	Gly	Tyr	Leu	Gln	Lys	Pro	Leu	Glu	Gly	Ser	Asn	Asn	Phe		
		35					40					45					
Lys	Pro	Glu	Asp	Ile	Thr	Glu	Ala	Leu	Arg	Ala	Phe	Gln	Glu	Ala	Ser		
		50				55					60						
Glu	Leu	Pro	Val	Ser	Gly	Gln	Leu	Asp	Asp	Ala	Thr	Arg	Ala	Arg	Met		

65					70					75				80
Arg	Gln	Pro	Arg	Cys	Gly	Leu	Glu	Asp	Pro	Phe	Asn	Gln	Lys	Thr
				85					90					95
Lys	Tyr	Leu	Leu	Leu	Gly	Arg	Trp	Arg	Lys	Lys	His	Leu	Thr	Phe
			100					105					110	
Ile	Leu	Asn	Leu	Pro	Ser	Thr	Leu	Pro	Pro	His	Thr	Ala	Arg	Ala
		115					120					125		
Leu	Arg	Gln	Ala	Phe	Gln	Asp	Trp	Ser	Asn	Val	Ala	Pro	Leu	Thr
	130					135					140			Phe
Gln	Glu	Val	Gln	Ala	Gly	Ala	Ala	Asp	Ile	Arg	Leu	Ser	Phe	His
145					150					155				Gly
Arg	Gln	Ser	Ser	Tyr	Cys	Ser	Asn	Thr	Phe	Asp	Gly	Pro	Gly	Arg
				165					170					175
Leu	Ala	His	Ala	Asp	Ile	Pro	Glu	Leu	Gly	Ser	Val	His	Phe	Asp
			180					185					190	Glu
Asp	Glu	Phe	Trp	Thr	Glu	Gly	Thr	Tyr	Arg	Gly	Val	Asn	Leu	Arg
	195						200					205		Ile
Ile	Ala	Ala	His	Glu	Val	Gly	His	Ala	Leu	Gly	Leu	Gly	His	Ser
	210					215					220			Arg
Tyr	Ser	Gln	Ala	Leu	Met	Ala	Pro	Val	Tyr	Glu	Gly	Tyr	Arg	Pro
225					230					235				His
Phe	Lys	Leu	His	Pro	Asp	Asp	Val	Ala	Gly	Ile	Gln	Ala	Leu	Tyr
				245					250					Gly
Lys	Lys	Ser	Pro	Val	Ile	Arg	Asp	Glu	Glu	Glu	Glu	Glu	Thr	Glu
			260					265					270	Leu
Pro	Thr	Val	Pro	Pro	Val	Pro	Thr	Glu	Pro	Ser	Pro	Met	Pro	Asp
	275						280					285		Pro
Cys	Ser	Ser	Glu	Leu	Asp	Ala	Met	Met	Leu	Gly	Pro	Arg	Gly	Lys
	290					295					300			Thr
Tyr	Ala	Phe	Lys	Gly	Asp	Tyr	Val	Trp	Thr	Val	Ser	Asp	Ser	Gly
305					310					315				Pro
Gly	Pro	Leu	Phe	Arg	Val	Ser	Ala	Leu	Trp	Glu	Gly	Leu	Pro	Gly
				325					330					Asn
Leu	Asp	Ala	Ala	Val	Tyr	Ser	Pro	Arg	Thr	Gln	Trp	Ile	His	Phe
			340					345					350	Phe
Lys	Gly	Asp	Lys	Val	Trp	Arg	Tyr	Ile	Asn	Phe	Lys	Met	Ser	Pro
	355					360						365		Gly
Phe	Pro	Lys	Lys	Leu	Asn	Arg	Val	Glu	Pro	Asn	Leu	Asp	Ala	Ala
	370					375					380			Leu
Tyr	Trp	Pro	Leu	Asn	Gln	Lys	Val	Phe	Leu	Phe	Lys	Gly	Ser	Gly
385					390				395					Tyr
Trp	Gln	Trp	Asp	Glu	Leu	Ala	Arg	Thr	Asp	Phe	Ser	Ser	Tyr	Pro
			405					410						Lys
Pro	Ile	Lys	Gly	Leu	Phe	Thr	Gly	Val	Pro	Asn	Gln	Pro	Ser	Ala
			420				425						430	Ala
Met	Ser	Trp	Gln	Asp	Gly	Arg	Val	Tyr	Phe	Phe	Lys	Gly	Lys	Val
	435						440					445		Tyr
Trp	Arg	Leu	Asn	Gln	Gln	Leu	Arg	Val	Glu	Lys	Gly	Tyr	Pro	Arg
	450					455					460			Asn
Ile	Ser	His	Asn	Trp	Met	His	Cys	Arg	Pro	Arg	Thr	Ile	Asp	Thr
465					470					475				Thr
Pro	Ser	Gly	Gly	Asn	Thr	Thr	Pro	Ser	Gly	Thr	Gly	Ile	Thr	Leu
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<400> 123

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 aggtgtgtgc cctccggccc ctgaagc atg gcc agc agc ggc atg gct gac agc 174  
 Met Ala Ser Ser Gly Met Ala Asp Ser

1 5

gcc aac cac ctg ccc ttc ttt ttc ggc aac atc acc cgg gag gag gca 222  
 Ala Asn His Leu Pro Phe Phe Phe Gly Asn Ile Thr Arg Glu Glu Ala  
 10 15 20 25

gaa gat tac ctg gtc cag ggg ggc atg agt gat ggg ctt tat ttg ctg 270  
 Glu Asp Tyr Leu Val Gln Gly Gly Met Ser Asp Gly Leu Tyr Leu Leu  
 30 35 40

cgc cag agc cgc aac tac ctg ggt ggc ttc gcc ctg tcc gtg gcc cac 318  
 Arg Gln Ser Arg Asn Tyr Leu Gly Phe Ala Leu Ser Val Ala His  
 45 50 55

ggg agg aag gca cac cac tac acc atc gag cgg gag ctg aat ggc acc 366  
 Gly Arg Lys Ala His His Tyr Thr Ile Glu Arg Glu Leu Asn Gly Thr  
 60 65 70

tac gcc atc gcc ggt ggc agg acc cat gcc agc ccc gcc gac ctc tgc 414  
 Tyr Ala Ile Ala Gly Gly Arg Thr His Ala Ser Pro Ala Asp Leu Cys  
 75 80 85

cac tac cac tcc cag gag tct gat ggc ctg gtc tgc ctc ctc aag aag 462  
 His Tyr His Ser Gln Glu Ser Asp Gly Leu Val Cys Leu Leu Lys Lys  
 90 95 100 105

ccc ttc aac cgg ccc caa ggg gtg cag ccc aag act ggg ccc ttt gag 510  
 Pro Phe Asn Arg Pro Gln Gly Val Gln Pro Lys Thr Gly Pro Phe Glu  
 110 115 120

gat ttg aag gaa aac ctc atc agg gaa tat gtg aag cag aca tgg aac 558  
 Asp Leu Lys Glu Asn Leu Ile Arg Glu Tyr Val Lys Gln Thr Trp Asn  
 125 130 135

ctg cag ggt cag gct ctg gag cag gcc atc atc agt cag aag cct cag 606  
 Leu Gln Gly Gln Ala Leu Glu Gln Ala Ile Ile Ser Gln Lys Pro Gln  
 140 145 150

ctg gag aag ctg atc gct acc aca gcc cat gaa aaa atg cct tgg ttc 654  
 Leu Glu Lys Leu Ile Ala Thr Thr Ala His Glu Lys Met Pro Trp Phe  
 155 160 165

cat gga aaa atc tct cgg gaa gaa tct gag caa att gtc ctg ata gga 702  
 His Gly Lys Ile Ser Arg Glu Glu Ser Glu Gln Ile Val Leu Ile Gly  
 170 175 180 185

tca aag aca aat gga aag ttc ctg atc cga gcc aga gac aac aac ggc 750  
 Ser Lys Thr Asn Gly Lys Phe Leu Ile Arg Ala Arg Asp Asn Asn Gly  
 190 195 200

tcc tac gcc ctg tgc ctg ctg cac gaa ggg aag gtg ctg cac tat cgc 798  
 Ser Tyr Ala Leu Cys Leu Leu His Glu Gly Lys Val Leu His Tyr Arg  
 205 210 215

atc gac aaa gac aag aca ggg aag ctc tcc atc ccc gag gga aag aag	846
Ile Asp Lys Asp Lys Thr Gly Lys Leu Ser Ile Pro Glu Gly Lys Lys	
220 225 230	
ttc gac acg ctc tgg cag cta gtc gag cat tat tct tat aaa gca gat	894
Phe Asp Thr Leu Trp Gln Leu Val Glu His Tyr Ser Tyr Lys Ala Asp	
235 240 245	
ggc ttg tta aga gtt ctt act gtc cca tgt caa aaa atc ggc aca cag	942
Gly Leu Leu Arg Val Leu Thr Val Pro Cys Gln Lys Ile Gly Thr Gln	
250 255 260 265	
gga aat gtt aat ttt gga ggc cgt cca caa ctt cca ggt tcc cat cct	990
Gly Asn Val Asn Phe Gly Gly Arg Pro Gln Leu Pro Gly Ser His Pro	
270 275 280	
gcg act tgg tca gcg ggt gga ata atc tca aga atc aaa tca tac tcc	1038
Ala Thr Trp Ser Ala Gly Gly Ile Ile Ser Arg Ile Lys Ser Tyr Ser	
285 290 295	
ttc cca aag cct ggc cac aga aag tcc tcc cct gcc caa ggg aac cgg	1086
Phe Pro Lys Pro Gly His Arg Lys Ser Ser Pro Ala Gln Gly Asn Arg	
300 305 310	
caa gag agt act gtg tca ttc aat ccg tat gag cca gaa ctt gca ccc	1134
Gln Glu Ser Thr Val Ser Phe Asn Pro Tyr Glu Pro Glu Leu Ala Pro	
315 320 325	
tgg gct gca gac aaa ggc ccc cag aga gaa gcc cta ccc atg gac aca	1182
Trp Ala Ala Asp Lys Gly Pro Gln Arg Glu Ala Leu Pro Met Asp Thr	
330 335 340 345	
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Glu Val Tyr Glu Ser Pro Tyr Ala Asp Pro Glu Glu Ile Arg Pro Lys	
350 355 360	
gag gtt tac ctg gac cga aag ctg ctg acg ctg gaa gac aaa gaa ctg	1278
Glu Val Tyr Leu Asp Arg Lys Leu Leu Thr Leu Glu Asp Lys Glu Leu	
365 370 375	
ggc tct ggt aat ttt gga act gtg aaa aag ggc tac tac caa atg aaa	1326
Gly Ser Gly Asn Phe Gly Thr Val Lys Lys Gly Tyr Tyr Gln Met Lys	
380 385 390	
aaa gtt gtg aaa acc gtg gct gtg aaa ata ctg aaa aac gag gcc aat	1374
Lys Val Val Lys Thr Val Ala Val Lys Ile Leu Lys Asn Glu Ala Asn	
395 400 405	
gac ccc gct ctt aaa gat gag tta tta gca gaa gca aat gtc atg cag	1422
Asp Pro Ala Leu Lys Asp Glu Leu Leu Ala Glu Ala Asn Val Met Gln	
410 415 420 425	
cag ctg gac aac ccg tac atc gtg cgg atg atc ggg ata tgc gag gcc	1470
Gln Leu Asp Asn Pro Tyr Ile Val Arg Met Ile Gly Ile Cys Glu Ala	
430 435 440	
gag tcc tgg atg ctg gtt atg gag atg gca gaa ctt ggt ccc ctc aat	1518
Glu Ser Trp Met Leu Val Met Glu Met Ala Glu Leu Gly Pro Leu Asn	
445 450 455	
aag tat ttg cag cag aac aga cat gtc aag gat aag aac atc ata gaa	1566

Lys Tyr Leu Gln Gln Asn Arg His Val Lys Asp Lys Asn Ile Ile Glu	
460	465 470
ctg gtt cat cag gtt tcc atg ggc atg aag tac ttg gag gag agc aat	1614
Leu Val His Gln Val Ser Met Gly Met Lys Tyr Leu Glu Glu Ser Asn	
475	480 485
ttt gtg cac aga gat ctg gct gca aga aat gtg ttg cta gtt acc caa	1662
Phe Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Leu Val Thr Gln	
490	495 500 505
cat tac gcc aag atc agt gat ttc gga ctt tcc aaa gca ctg cgt gct	1710
His Tyr Ala Lys Ile Ser Asp Phe Gly Leu Ser Lys Ala Leu Arg Ala	
	510 515 520
gat gaa aac tac tac aag gcc cag acc cat gga aag tgg cct gtc aag	1758
Asp Glu Asn Tyr Tyr Lys Ala Gln Thr His Gly Lys Trp Pro Val Lys	
	525 530 535
tgg tac gct ccg gaa tgc atc aac tac tac aag ttc tcc agc aaa agc	1806
Trp Tyr Ala Pro Glu Cys Ile Asn Tyr Tyr Lys Phe Ser Ser Lys Ser	
	540 545 550
gat gtc tgg agc ttt gga gtg ttg atg tgg gaa gca ttc tcc tat ggg	1854
Asp Val Trp Ser Phe Gly Val Leu Met Trp Glu Ala Phe Ser Tyr Gly	
	555 560 565
cag aag cca tat cga ggg atg aaa gga agt gaa gtc acc gct atg tta	1902
Gln Lys Pro Tyr Arg Gly Met Lys Gly Ser Glu Val Thr Ala Met Leu	
	570 575 580 585
gag aaa gga gag cgg atg ggg tgc cct gca ggg tgt cca aga gag atg	1950
Glu Lys Gly Glu Arg Met Gly Cys Pro Ala Gly Cys Pro Arg Glu Met	
	590 595 600
tac gat ctc atg aat ctg tgc tgg aca tac gat gtg gaa aac agg ccc	1998
Tyr Asp Leu Met Asn Leu Cys Trp Thr Tyr Asp Val Glu Asn Arg Pro	
	605 610 615
gga ttc gca gca gtg gaa ctg cgg ctg cgc aat tac tac tat gac gtg	2046
Gly Phe Ala Ala Val Glu Leu Arg Leu Arg Asn Tyr Tyr Tyr Asp Val	
	620 625 630
gtg aac taa ccgctccccgc acctgtcggg ggctgccttt gatcacagga	2095
Val Asn *	
635	
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caca	2639
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<213> Homo Sapiens	

<400> 124

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Phe	Gly	Asn	Ile	Thr	Arg	Glu	Glu	Ala	Glu	Asp	Tyr	Leu	Val	Gln	Gly
			20					25					30		
Gly	Met	Ser	Asp	Gly	Leu	Tyr	Leu	Leu	Arg	Gln	Ser	Arg	Asn	Tyr	Leu
		35					40					45			
Gly	Gly	Phe	Ala	Leu	Ser	Val	Ala	His	Gly	Arg	Lys	Ala	His	His	Tyr
	50					55					60				
Thr	Ile	Glu	Arg	Glu	Leu	Asn	Gly	Thr	Tyr	Ala	Ile	Ala	Gly	Gly	Arg
65					70					75					80
Thr	His	Ala	Ser	Pro	Ala	Asp	Leu	Cys	His	Tyr	His	Ser	Gln	Glu	Ser
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Asp	Gly	Leu	Val	Cys	Leu	Leu	Lys	Lys	Pro	Phe	Asn	Arg	Pro	Gln	Gly
			100					105					110		
Val	Gln	Pro	Lys	Thr	Gly	Pro	Phe	Glu	Asp	Leu	Lys	Glu	Asn	Leu	Ile
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Arg	Glu	Tyr	Val	Lys	Gln	Thr	Trp	Asn	Leu	Gln	Gly	Gln	Ala	Leu	Glu
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Gln	Ala	Ile	Ile	Ser	Gln	Lys	Pro	Gln	Leu	Glu	Lys	Leu	Ile	Ala	Thr
145					150					155					160
Thr	Ala	His	Glu	Lys	Met	Pro	Trp	Phe	His	Gly	Lys	Ile	Ser	Arg	Glu
				165					170					175	
Glu	Ser	Glu	Gln	Ile	Val	Leu	Ile	Gly	Ser	Lys	Thr	Asn	Gly	Lys	Phe
			180					185					190		
Leu	Ile	Arg	Ala	Arg	Asp	Asn	Asn	Gly	Ser	Tyr	Ala	Leu	Cys	Leu	Leu
		195					200					205			
His	Glu	Gly	Lys	Val	Leu	His	Tyr	Arg	Ile	Asp	Lys	Asp	Lys	Thr	Gly
	210					215					220				
Lys	Leu	Ser	Ile	Pro	Glu	Gly	Lys	Lys	Phe	Asp	Thr	Leu	Trp	Gln	Leu
225					230					235					240
Val	Glu	His	Tyr	Ser	Tyr	Lys	Ala	Asp	Gly	Leu	Leu	Arg	Val	Leu	Thr
				245					250					255	
Val	Pro	Cys	Gln	Lys	Ile	Gly	Thr	Gln	Gly	Asn	Val	Asn	Phe	Gly	Gly
			260					265					270		
Arg	Pro	Gln	Leu	Pro	Gly	Ser	His	Pro	Ala	Thr	Trp	Ser	Ala	Gly	Gly
		275					280					285			
Ile	Ile	Ser	Arg	Ile	Lys	Ser	Tyr	Ser	Phe	Pro	Lys	Pro	Gly	His	Arg
	290					295					300				
Lys	Ser	Ser	Pro	Ala	Gln	Gly	Asn	Arg	Gln	Glu	Ser	Thr	Val	Ser	Phe
305					310					315					320
Asn	Pro	Tyr	Glu	Pro	Glu	Leu	Ala	Pro	Trp	Ala	Ala	Asp	Lys	Gly	Pro
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Gln	Arg	Glu	Ala	Leu	Pro	Met	Asp	Thr	Glu	Val	Tyr	Glu	Ser	Pro	Tyr
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Ala	Asp	Pro	Glu	Glu	Ile	Arg	Pro	Lys	Glu	Val	Tyr	Leu	Asp	Arg	Lys
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Leu	Leu	Thr	Leu	Glu	Asp	Lys	Glu	Leu	Gly	Ser	Gly	Asn	Phe	Gly	Thr
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Val	Lys	Lys	Gly	Tyr	Tyr	Gln	Met	Lys	Lys	Val	Val	Lys	Thr	Val	Ala
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Val	Lys	Ile	Leu	Lys	Asn	Glu	Ala	Asn	Asp	Pro	Ala	Leu	Lys	Asp	Glu
				405					410					415	
Leu	Leu	Ala	Glu	Ala	Asn	Val	Met	Gln	Gln	Leu	Asp	Asn	Pro	Tyr	Ile
			420					425					430		
Val	Arg	Met	Ile	Gly	Ile	Cys	Glu	Ala	Glu	Ser	Trp	Met	Leu	Val	Met
		435					440					445			
Glu	Met	Ala	Glu	Leu	Gly	Pro	Leu	Asn	Lys	Tyr	Leu	Gln	Gln	Asn	Arg
		450				455					460				
His	Val	Lys	Asp	Lys	Asn	Ile	Ile	Glu	Leu	Val	His	Gln	Val	Ser	Met
465					470					475					480

Gly	Met	Lys	Tyr	Leu	Glu	Glu	Ser	Asn	Phe	Val	His	Arg	Asp	Leu	Ala	
				485					490					495		
Ala	Arg	Asn	Val	Leu	Leu	Val	Thr	Gln	His	Tyr	Ala	Lys	Ile	Ser	Asp	
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Phe	Gly	Leu	Ser	Lys	Ala	Leu	Arg	Ala	Asp	Glu	Asn	Tyr	Tyr	Lys	Ala	
		515					520					525				
Gln	Thr	His	Gly	Lys	Trp	Pro	Val	Lys	Trp	Tyr	Ala	Pro	Glu	Cys	Ile	
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Asn	Tyr	Tyr	Lys	Phe	Ser	Ser	Lys	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	
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Leu	Met	Trp	Glu	Ala	Phe	Ser	Tyr	Gly	Gln	Lys	Pro	Tyr	Arg	Gly	Met	
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Lys	Gly	Ser	Glu	Val	Thr	Ala	Met	Leu	Glu	Lys	Gly	Glu	Arg	Met	Gly	
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Cys	Pro	Ala	Gly	Cys	Pro	Arg	Glu	Met	Tyr	Asp	Leu	Met	Asn	Leu	Cys	
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Trp	Thr	Tyr	Asp	Val	Glu	Asn	Arg	Pro	Gly	Phe	Ala	Ala	Val	Glu	Leu	
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 cagcctggga ggggccacac cctgaccatc cccctttatc ccttctgaga tgtttgtag 180  
 gaagtctggg tccaggggat atcatttctt gttccatcc atg cag ggg ttg ctt 234  
 Met Gln Gly Leu Leu  
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acc tcg ggt agg aaa ccc tca ggc ggt ggc agg tgc aca ggt agg gga 282  
 Thr Ser Gly Arg Lys Pro Ser Gly Gly Gly Arg Cys Thr Gly Arg Gly  
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gga tgg aga ggg cag tgg tgc ctg aag ccc tgg atg ggc gga gct gac 330  
 Gly Trp Arg Gly Gln Trp Cys Leu Lys Pro Trp Met Gly Gly Ala Asp  
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ccc cca aca cca act cta tca tgc ctg ctc ctc cct gtc ccc cca gag 378  
 Pro Pro Thr Pro Thr Leu Ser Cys Leu Leu Leu Pro Val Pro Pro Glu  
 40 45 50

ctg cct gat cat tgc tac aga atg aac tct agc cca gct ggg acc cca 426  
 Leu Pro Asp His Cys Tyr Arg Met Asn Ser Ser Pro Ala Gly Thr Pro  
 55 60 65

agt cca cag ccc tcc agg gcc aat ggg aac atc aac ctg ggg cct tca 474  
 Ser Pro Gln Pro Ser Arg Ala Asn Gly Asn Ile Asn Leu Gly Pro Ser  
 70 75 80 85

gcc aac cca aat gcc cag ccc acg gac ttc gac ttc ctc aaa gtc atc 522  
 Ala Asn Pro Asn Ala Gln Pro Thr Asp Phe Asp Phe Leu Lys Val Ile  
 90 95 100

ggc aaa ggg aac tac ggg aag gtc cta ctg gcc aag cgc aag tct gat	570
Gly Lys Gly Asn Tyr Gly Lys Val Leu Leu Ala Lys Arg Lys Ser Asp	
105 110 115	
ggg gcg ttc tat gca gtg aag gta cta cag aaa aag tcc atc tta aag	618
Gly Ala Phe Tyr Ala Val Lys Val Leu Gln Lys Lys Ser Ile Leu Lys	
120 125 130	
aag aaa gag cag agc cac atc atg gca gag cgc agt gtg ctt ctg aag	666
Lys Lys Glu Gln Ser His Ile Met Ala Glu Arg Ser Val Leu Leu Lys	
135 140 145	
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Asn Val Arg His Pro Phe Leu Val Gly Leu Arg Tyr Ser Phe Gln Thr	
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cct gag aag ctc tac ttc gtg ctc gac tat gtc aac ggg gga gag ctc	762
Pro Glu Lys Leu Tyr Phe Val Leu Asp Tyr Val Asn Gly Gly Glu Leu	
170 175 180	
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Phe Phe His Leu Gln Arg Glu Arg Arg Phe Leu Glu Pro Arg Ala Arg	
185 190 195	
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Phe Tyr Ala Ala Glu Val Ala Ser Ala Ile Gly Tyr Leu His Ser Leu	
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Asn Ile Ile Tyr Arg Asp Leu Lys Pro Glu Asn Ile Leu Leu Asp Cys	
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cag gga cac gtg gtg ctg acg gat ttt ggc ctc tgc aag gaa ggt gta	954
Gln Gly His Val Val Leu Thr Asp Phe Gly Leu Cys Lys Glu Gly Val	
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Glu Pro Glu Asp Thr Ser Thr Phe Cys Gly Thr Pro Glu Tyr Leu	
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Ala Pro Glu Val Leu Arg Lys Glu Pro Tyr Asp Arg Ala Val Asp Trp	
265 270 275	
tgg tgc ttg ggg gca gtc ctc tac gag atg ctc cat ggc ctg ccg ccc	1098
Trp Cys Leu Gly Ala Val Leu Tyr Glu Met Leu His Gly Leu Pro Pro	
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ttc tac agc caa gat gta tcc cag atg tat gag aac att ctg cac cag	1146
Phe Tyr Ser Gln Asp Val Ser Gln Met Tyr Glu Asn Ile Leu His Gln	
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ccg cta cag atc ccc gga ggc cgg aca gtg gcc gcc tgt gac ctc ctg	1194
Pro Leu Gln Ile Pro Gly Gly Arg Thr Val Ala Ala Cys Asp Leu Leu	
310 315 320 325	
caa agc ctt ctc cac aag gac cag agg cag cgg ctg ggc tcc aaa gca	1242
Gln Ser Leu Leu His Lys Asp Gln Arg Gln Arg Leu Gly Ser Lys Ala	
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gac ttt ctt gag att aag aac cat gta ttc ttc agc ccc ata aac tgg	1290



Asp Phe Leu Glu Ile Lys Asn His Val Phe Phe Ser Pro Ile Asn Trp  
 345 350 355  
 gat gac ctg tac cac aag agg cta act cca ccc ttc aac cca aat gtg 1338  
 Asp Asp Leu Tyr His Lys Arg Leu Thr Pro Pro Phe Asn Pro Asn Val  
 360 365 370  
 aca gga cct gct gac ttg aag cat ttt gac cca gag ttc acc cag gaa 1386  
 Thr Gly Pro Ala Asp Leu Lys His Phe Asp Pro Glu Phe Thr Gln Glu  
 375 380 385  
 gct gtg tcc aag tcc att ggc tgt acc cct gac act gtg gcc agc agc 1434  
 Ala Val Ser Lys Ser Ile Gly Cys Thr Pro Asp Thr Val Ala Ser Ser  
 390 395 400 405  
 tct ggg gcc tca agt gca ttc ctg gga ttt tct tat gcg cca gag gat 1482  
 Ser Gly Ala Ser Ser Ala Phe Leu Gly Phe Ser Tyr Ala Pro Glu Asp  
 410 415 420  
 gat gac atc ttg gat tgc tag aagagaagga cctgtgaaac tactgaggcc 1533  
 Asp Asp Ile Leu Asp Cys \*  
 425

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<211> 427

<212> PRT

<213> Homo Sapiens

<400> 126

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 Met Gly Gly Ala Asp Pro Pro Thr Pro Thr Leu Ser Cys Leu Leu Leu  
 35 40 45  
 Pro Val Pro Pro Glu Leu Pro Asp His Cys Tyr Arg Met Asn Ser Ser  
 50 55 60  
 Pro Ala Gly Thr Pro Ser Pro Gln Pro Ser Arg Ala Asn Gly Asn Ile  
 65 70 75 80  
 Asn Leu Gly Pro Ser Ala Asn Pro Asn Ala Gln Pro Thr Asp Phe Asp  
 85 90 95  
 Phe Leu Lys Val Ile Gly Lys Gly Asn Tyr Gly Lys Val Leu Leu Ala  
 100 105 110  
 Lys Arg Lys Ser Asp Gly Ala Phe Tyr Ala Val Lys Val Leu Gln Lys  
 115 120 125  
 Lys Ser Ile Leu Lys Lys Lys Glu Gln Ser His Ile Met Ala Glu Arg  
 130 135 140  
 Ser Val Leu Leu Lys Asn Val Arg His Pro Phe Leu Val Gly Leu Arg  
 145 150 155 160  
 Tyr Ser Phe Gln Thr Pro Glu Lys Leu Tyr Phe Val Leu Asp Tyr Val



Val	Val	Leu	Glu	Asp	Leu	Ser	Pro	Leu	Glu	Ala	Arg	Val	Thr	Arg	Ile		
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ttc	ctg	gtg	gtg	gtc	tac	agc	atc	gtc	tgc	ttc	ctc	ggg	att	ctg	ggc	678	
Phe	Leu	Val	Val	Val	Tyr	Ser	Ile	Val	Cys	Phe	Leu	Gly	Ile	Leu	Gly		
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aat	ggt	ctg	gtg	atc	atc	att	gcc	acc	ttc	aag	atg	aag	aag	aca	gtg	726	
Asn	Gly	Leu	Val	Ile	Ile	Ile	Ala	Thr	Phe	Lys	Met	Lys	Lys	Thr	Val		
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aac	atg	gtc	tgg	ttc	ctc	aac	ctg	gca	gtg	gca	gat	ttc	ctg	ttc	aac	774	
Asn	Met	Val	Trp	Phe	Leu	Asn	Leu	Ala	Val	Ala	Asp	Phe	Leu	Phe	Asn		
			75					80						85			
gtc	ttc	ctc	cca	atc	cat	atc	acc	tat	gcc	gcc	atg	gac	tac	cac	tgg	822	
Val	Phe	Leu	Pro	Ile	His	Ile	Thr	Tyr	Ala	Ala	Met	Asp	Tyr	His	Trp		
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Val	Phe	Gly	Thr	Ala	Met	Cys	Lys	Ile	Ser	Asn	Phe	Leu	Leu	Ile	His		
105						110					115						
aac	atg	ttc	acc	agc	gtc	ttc	ctg	ctg	acc	atc	atc	agc	tct	gac	cgc	918	
Asn	Met	Phe	Thr	Ser	Val	Phe	Leu	Leu	Thr	Ile	Ile	Ser	Ser	Asp	Arg		
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tgc	atc	tct	gtg	ctc	ctc	cct	gtc	tgg	tcc	cag	aac	cac	cgc	agc	gtt	966	
Cys	Ile	Ser	Val	Leu	Leu	Pro	Val	Trp	Ser	Gln	Asn	His	Arg	Ser	Val		
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cgc	ctg	gct	tac	atg	gcc	tgc	atg	gtc	atc	tgg	gtc	ctg	gct	ttc	ttc	1014	
Arg	Leu	Ala	Tyr	Met	Ala	Cys	Met	Val	Ile	Trp	Val	Leu	Ala	Phe	Phe		
			155					160						165			
ttg	agt	tcc	cca	tct	ctc	gtc	ttc	cgg	gac	aca	gcc	aac	ctg	cat	ggg	1062	
Leu	Ser	Ser	Pro	Ser	Leu	Val	Phe	Arg	Asp	Thr	Ala	Asn	Leu	His	Gly		
			170					175						180			
aaa	ata	tcc	tgc	ttc	aac	aac	ttc	agc	ctg	tcc	aca	cct	ggg	tct	tcc	1110	
Lys	Ile	Ser	Cys	Phe	Asn	Asn	Phe	Ser	Leu	Ser	Thr	Pro	Gly	Ser	Ser		
185						190					195						
tcg	tgg	ccc	act	cac	tcc	caa	atg	gac	cct	gtg	ggg	tat	agc	cgg	cac	1158	
Ser	Trp	Pro	Thr	His	Ser	Gln	Met	Asp	Pro	Val	Gly	Tyr	Ser	Arg	His		
200					205					210					215		
atg	gtg	gtg	act	gtc	acc	cgc	ttc	ctc	tgt	ggc	ttc	ctg	gtc	cca	gtc	1206	
Met	Val	Val	Thr	Val	Thr	Arg	Phe	Leu	Cys	Gly	Phe	Leu	Val	Pro	Val		
				220					225					230			
ctc	atc	atc	aca	gct	tgc	tac	ctc	acc	atc	gtg	tgc	aaa	ctg	cag	cgc	1254	
Leu	Ile	Ile	Thr	Ala	Cys	Tyr	Leu	Thr	Ile	Val	Cys	Lys	Leu	Gln	Arg		
			235					240						245			
aac	cgc	ctg	gcc	aag	acc	aag	aag	ccc	ttc	aag	att	att	gtg	acc	atc	1302	
Asn	Arg	Leu	Ala	Lys	Thr	Lys	Lys	Pro	Phe	Lys	Ile	Ile	Val	Thr	Ile		
			250					255						260			
atc	att	acc	ttc	ttc	ctc	tgc	tgg	tgc	ccc	tac	cac	aca	ctc	aac	ctc	1350	
Ile	Ile	Thr	Phe	Phe	Leu	Cys	Trp	Cys	Pro	Tyr	His	Thr	Leu	Asn	Leu		
265						270					275						

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cta gag ctc cac cac act gcc atg cct ggc tct gtc ttc agc ctg ggt 1398
Leu Glu Leu His His Thr Ala Met Pro Gly Ser Val Phe Ser Leu Gly
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ttg ccc ctg gcc act gcc ctt gcc att gcc aac agc tgc atg aac ccc 1446
Leu Pro Leu Ala Thr Ala Leu Ala Ile Ala Asn Ser Cys Met Asn Pro
300 305 310

att ctg tat gtt ttc atg ggt cag gac ttc aag aag ttc aag gtg gcc 1494
Ile Leu Tyr Val Phe Met Gly Gln Asp Phe Lys Lys Phe Lys Val Ala
315 320 325

ctc ttc tct cgc ctg gtc aat gct cta agt gaa gat aca ggc cac tct 1542
Leu Phe Ser Arg Leu Val Asn Ala Leu Ser Glu Asp Thr Gly His Ser
330 335 340

tcc tac ccc agc cat aga agc ttt acc aag atg tca tca atg aat gag 1590
Ser Tyr Pro Ser His Arg Ser Phe Thr Lys Met Ser Ser Met Asn Glu
345 350 355

agg act tct atg aat gag agg gag acc ggc atg ctt tga tcctcactgt 1639
Arg Thr Ser Met Asn Glu Arg Glu Thr Gly Met Leu *
360 365 370

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 <213> Homo Sapiens

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35 40 45
Cys Phe Leu Gly Ile Leu Gly Asn Gly Leu Val Ile Ile Ile Ala Thr
50 55 60
Phe Lys Met Lys Lys Thr Val Asn Met Val Trp Phe Leu Asn Leu Ala
65 70 75 80
Val Ala Asp Phe Leu Phe Asn Val Phe Leu Pro Ile His Ile Thr Tyr
85 90 95
Ala Ala Met Asp Tyr His Trp Val Phe Gly Thr Ala Met Cys Lys Ile
100 105 110
Ser Asn Phe Leu Leu Ile His Asn Met Phe Thr Ser Val Phe Leu Leu
115 120 125
Thr Ile Ile Ser Ser Asp Arg Cys Ile Ser Val Leu Leu Pro Val Trp
130 135 140
Ser Gln Asn His Arg Ser Val Arg Leu Ala Tyr Met Ala Cys Met Val
145 150 155 160
Ile Trp Val Leu Ala Phe Phe Leu Ser Ser Pro Ser Leu Val Phe Arg
165 170 175
Asp Thr Ala Asn Leu His Gly Lys Ile Ser Cys Phe Asn Asn Phe Ser
180 185 190
Leu Ser Thr Pro Gly Ser Ser Ser Trp Pro Thr His Ser Gln Met Asp

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Tyr Thr Pro Asp Val Leu Thr Asp Thr Thr Ala Glu Leu Ala Val Ser	
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ctg cta ctt acc acc tgc cgc cgg ttg ccg gag gcc atc gag gaa gtg	440
Leu Leu Leu Thr Thr Cys Arg Arg Leu Pro Glu Ala Ile Glu Glu Val	
120 125 130	
aag aat ggt ggc tgg acc tcg tgg aag ccc ctc tgg ctg tgt ggc tat	488
Lys Asn Gly Gly Trp Thr Ser Trp Lys Pro Leu Trp Leu Cys Gly Tyr	
135 140 145	
gga ctc acg cag agc act gtc ggc atc atc ggg ctg ggg cgc ata ggc	536
Gly Leu Thr Gln Ser Thr Val Gly Ile Ile Gly Leu Gly Arg Ile Gly	
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cag gcc att gct cgg cgt ctg aaa cca ttc ggt gtc cag aga ttt ctg	584
Gln Ala Ile Ala Arg Arg Leu Lys Pro Phe Gly Val Gln Arg Phe Leu	
170 175 180	
tac aca ggg cgc cag ccc agg cct gag gaa gca gca gaa ttc cag gca	632
Tyr Thr Gly Arg Gln Pro Arg Pro Glu Glu Ala Ala Glu Phe Gln Ala	
185 190 195	
gag ttt gtg tct acc cct gag ctg gct gcc caa tct gat ttc atc gtc	680
Glu Phe Val Ser Thr Pro Glu Leu Ala Ala Gln Ser Asp Phe Ile Val	
200 205 210	
gtg gcc tgc tcc tta aca cct gca acc gag gga ctc tgc aac aag gac	728
Val Ala Cys Ser Leu Thr Pro Ala Thr Glu Gly Leu Cys Asn Lys Asp	
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ttc ttc cag aag atg aag gaa aca gct gtg ttc atc aac atc agc agg	776
Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe Ile Asn Ile Ser Arg	
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Gly Asp Val Val Asn Gln Asp Asp Leu Tyr Gln Ala Leu Ala Ser Gly	
250 255 260	
aag att gca gct gct gga ctg gat gtg acg agc cca gaa cca ctg cct	872
Lys Ile Ala Ala Ala Gly Leu Asp Val Thr Ser Pro Glu Pro Leu Pro	
265 270 275	
aca aac cac cct ctc ctg acc ctg aag aac tgt gtg att ctg ccc cac	920
Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys Val Ile Leu Pro His	
280 285 290	
att ggc agt gcc acc cac aga acc cgc aac acc atg tcc ttg ttg gca	968
Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr Met Ser Leu Leu Ala	
295 300 305	
gct aac aac ttg ctg gct ggc ctg aga ggg gag ccg atg cct agt gaa	1016
Ala Asn Asn Leu Leu Ala Gly Leu Arg Gly Glu Pro Met Pro Ser Glu	
310 315 320 325	
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Leu Lys Leu *	

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 <212> PRT  
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 35 40 45  
 Val Ala Gly Ala His Gly Leu Leu Cys Leu Leu Ser Asp His Val Asp  
 50 55 60  
 Lys Arg Ile Leu Asp Ala Ala Gly Ala Asn Leu Lys Val Ile Ser Thr  
 65 70 75 80  
 Met Ser Val Gly Ile Asp His Leu Ala Leu Asp Glu Ile Lys Lys Arg  
 85 90 95  
 Gly Ile Arg Val Gly Tyr Thr Pro Asp Val Leu Thr Asp Thr Thr Ala  
 100 105 110  
 Glu Leu Ala Val Ser Leu Leu Leu Thr Thr Cys Arg Arg Leu Pro Glu  
 115 120 125  
 Ala Ile Glu Glu Val Lys Asn Gly Gly Trp Thr Ser Trp Lys Pro Leu  
 130 135 140  
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 Leu Gly Arg Ile Gly Gln Ala Ile Ala Arg Arg Leu Lys Pro Phe Gly  
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 Val Gln Arg Phe Leu Tyr Thr Gly Arg Gln Pro Arg Pro Glu Glu Ala  
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 195 200 205  
 Ser Asp Phe Ile Val Val Ala Cys Ser Leu Thr Pro Ala Thr Glu Gly  
 210 215 220  
 Leu Cys Asn Lys Asp Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe  
 225 230 235 240  
 Ile Asn Ile Ser Arg Gly Asp Val Val Asn Gln Asp Asp Leu Tyr Gln  
 245 250 255  
 Ala Leu Ala Ser Gly Lys Ile Ala Ala Ala Gly Leu Asp Val Thr Ser  
 260 265 270  
 Pro Glu Pro Leu Pro Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys  
 275 280 285  
 Val Ile Leu Pro His Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr  
 290 295 300  
 Met Ser Leu Leu Ala Ala Asn Asn Leu Leu Ala Gly Leu Arg Gly Glu  
 305 310 315 320  
 Pro Met Pro Ser Glu Leu Lys Leu  
 325